

RISING STORMS

Climate impacts on
conflict, community
tensions, and hunger



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This research would not have been possible without numerous people within and outside World Vision, including Todd Nitkin, Mary Njeri, Amanda Rives, and Yukiko Yamada Morovic.

Copyediting: Micah Branaman, Charlotte Masiello-Riome

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Martin accompanies his father to the farm to help him with taking care of the ducks and the chickens. "We cannot go out because it is very hot. This hot weather affects the farm, and it affects the chickens. Our chickens have died from the heat" says Martin.

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CIAS SOCIALES

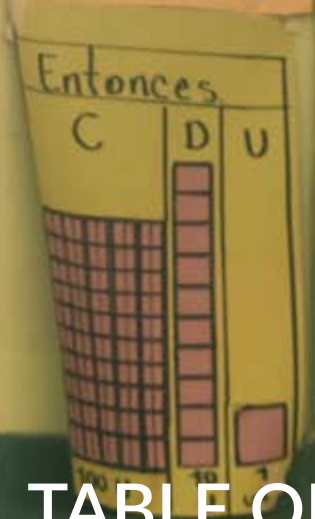


TABLE OF CONTENTS

Acronyms	4
Executive summary	5
Background	8
Framework and methodology	10
Key findings	13
Community experiences of climate hazards	13
Community experiences of conflict drivers	16
Climate change and conflict	20
Food security, agriculture, and livelihoods	21
Natural resource governance, corruption	23
Displacement	25
Negative coping mechanisms	26
Recommendations: How can we mitigate conflict and climate impacts?	30
Annexe 1: Extended methodology	36
Annexe 2: Country profiles	37

ACRONYMS

°C	degrees Celsius/centigrade
ACE	Action for Climate Empowerment
COP	Conference of Parties - UN climate change conference
CRC	Convention on the Rights of the Child
DRC	Democratic Republic of Congo
FMNR	farmer-managed natural regeneration
FGD	focus group discussion
GDP	gross domestic product
GHG	global greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
KII	key informant interview
NbS	nature-based solution
NDC	nationally determined contributions
NGO	non-governmental organisation
PNG	Papua New Guinea
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
US	United States
US\$	United States dollar

EXECUTIVE SUMMARY

For more than half a century, scientists have documented increasing evidence of how human activities have unbalanced our natural environment, leading to global warming,ⁱ but, despite aspirations to keep global warming to 1.5°C at Paris, we are already 1.1°C above pre-industrial levels, with carbon dioxide emissions reaching historical highs.ⁱⁱ At the same time, global hunger is rising for the first time in decades,ⁱⁱⁱ the numbers of people forced to flee their homes is at an all-time high,^{iv} and the numbers of violent conflicts are the highest since World War II.^v

Human-induced climate change is not only affecting our natural environment but is also one of the main security challenges of the 21st century. The link is clear to communities on the front line – climate change is already worsening violent conflict. Conflict, in turn, drives socioeconomic vulnerability and environmental degradation that worsens exposure to climate change – a wicked feedback loop.

IPCC reports provide scientific evidence of what is happening, what has happened, and what will happen depending on different temperature rise scenarios, but not many research projects have asked populations their perceptions of the risk of conflict due to changing climate conditions. This research uses field data from a survey of almost 3000 people in nine countries¹ to hear from them how climate hazards are fuelling conflict, displacement, and food insecurity, and in a wider range of contexts than commonly thought.

Overall, **86% respondents believe climate change poses a serious issue for their communities.** Many communities were not just experiencing a single impact of climate change, but multiple hazards simultaneously. In the Dry Corridor of Central America (Nicaragua, Guatemala, Honduras, and El Salvador) respondents spoke of ‘drought, hurricanes, floods, and storms’, while in Puttalam, Sri Lanka they were affected by ‘drought, monsoon and floods’.

The most **common concerns were drought (57%), rainfall pattern changes (48%), and heat waves (42%).**

Over half (51%) of survey respondents reported that reduced access to food and water was a key impact of climate hazards, while **57% completely agreed that climate change increased the risk of hunger/food insecurity.** Reduced food supplies force people to skip meals or eat foods with lower nutritional levels, which in turn drives higher levels of malnutrition, starvation and in some cases leads to instances of famine.

As crop yields are reduced through crop damage, land degradation, and water supply issues, among others, and production costs increase the price of agricultural and pastoral outputs, families struggle to make ends meet. When asked how they were negatively affected by climate change, three-quarters of respondents (72%) mentioned livelihood-related impacts, including ‘loss of livelihoods’, ‘reduced pastureland’, ‘crop failure’, and ‘difficulty accessing water/food’. Even more – **82% of respondents – agreed² with the statement ‘climate change worsens my economic situation’.**

“Climate’s variability, and the increasing frequency of hazards, majorly impacts their [households] economy . . . When we have enough money to spend and do things, the conflicts are less. When money is less, conflicts are going to happen.” – Climate Change Expert, Sri Lanka

Of respondents, 60% thought climate change specifically worsened conflict in their communities and **61% agreed that ‘if the negative impacts of climate change increase, conflict in my area will increase too’.** Pressures on natural resources are exacerbated by climate change; crop yields are reduced, land is degraded, and water supplies are diminished and

¹ Burkina Faso, the Democratic Republic of Congo (DRC), the Dry Corridor (Nicaragua, Guatemala, Honduras and El Salvador), Iraq, Papua New Guinea (PNG) and Sri Lanka

² either somewhat agreed (28%) or completely agreed (54%)

contaminated. Such pressures can create conflict within communities and between communities as land boundaries, access to water, pasture and dwindling resources are contested and public services are stressed further.

Interviewees and survey responses in all six case study locations cited issues associated with water and land as key conflict drivers. When asked the cause of environment and climate-related conflict in their community, 38% said it was due to water shortages. Corruption (20%) and displacement (17%) were the next most common answers. **More than twice as many respondents reported water-linked disputes than ethnic or sectarian disputes.**

One climate change specialist in the Dry Corridor reflected that ‘many experts predict that the next world war will not be over oil, but over water. Water is directly related to climate change.’

Respondents agreed almost universally (99%) that climate change leads to displacement

either from or to their community. Families displaced by the effects of climate change often arrive in urban areas already facing resource pressures due to ongoing urbanisation, where host populations are struggling to absorb large numbers of new arrivals and often have to do so with limited support. Displacements undermine social cohesion in the host community as well as in the displaced population as they seek to survive and make relationships between the two groups difficult.

This pattern was reaffirmed by a security expert in the Dry Corridor, ‘because there is no land and the means of production has been affected, people have to go around invading and have to settle in places where there is no legality . . . This generates any number of conflicts, and...there is no stability or security.’

In addition to climate change contributing to conflict, conflict can also cause environmental degradation, which can in turn worsen communities’ exposure to climate impacts. In the Dry Corridor, Centre Est, Burkina Faso, and Anbar, Iraq, conflict has led to faster rates

of deforestation contributing in places to desertification and increased temperature levels.

A local government official in Anbar aptly described the impact of conflict on the environment stating that:

“ Conflict can lead to significant environmental damage, including the destruction of infrastructure, forests, and agricultural land. The release of greenhouse gases from the burning of buildings and vehicles . . . can contribute to climate change and can hinder efforts to manage and protect natural resources . . . illegal logging and poaching can increase in conflict zones, contributing to deforestation and loss of biodiversity.

As the findings of this research make clear, the world must act at COP28 and beyond. Leaders from high income countries must fulfil the US\$100 billion annual climate financing commitment to lower-income countries, and although a ‘loss and damage’ fund has now been agreed, its size, scope and governance is yet to be determined. Donors, international non-governmental organisations, and governments alike must ensure that climate action does not aggravate existing flashpoints and supports peace.^{vi} And it is urgent that every global citizen make efforts to limit emissions so that collectively the world gets on track to limit climate change and meet the aspiration of limiting temperature increases to 1.5°C, as set out in the 2015 Paris Agreement.³

Without ambitious action to limit global warming and help countries find conflict-sensitive adaptation strategies, we will struggle to protect children and achieve the Sustainable Development Goals (SDGs). The global community’s current inadequate action on climate is disrupting livelihoods and education, increasing hunger and malnutrition and increasing risks of violence against children.

³ A legally binding international treaty on climate change adopted by 196 Parties in Paris, France in December 2015. For more background, see: UN Climate Change (UNCC) (n.d.) ‘[The Paris Agreement](#)’, [Accessed as of 27/10/2023].



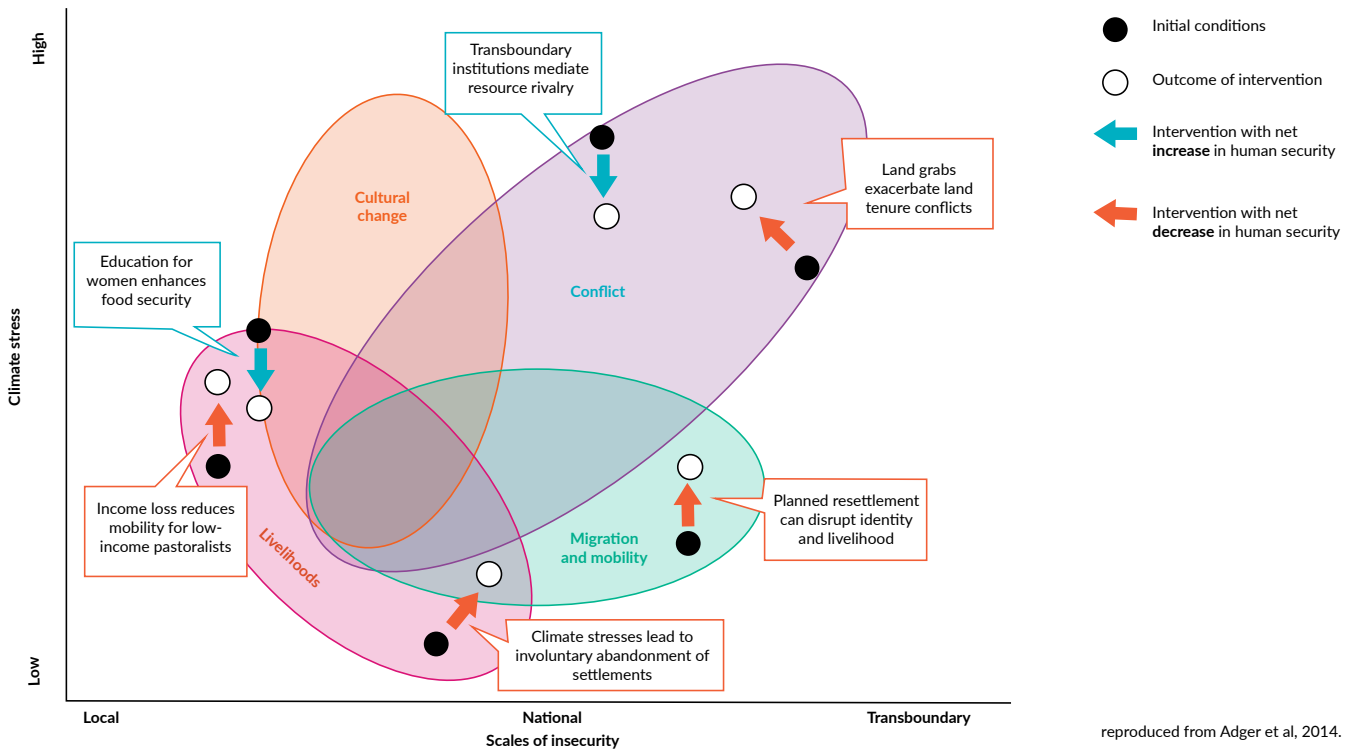
BACKGROUND

Today, climate change poses the most significant risk to human development. Glaciers are shrinking, sea levels are rising and deserts are expanding as a result of human-induced climate change.⁴ At the same time, new and protracted conflicts; disasters; and extreme weather brought on by climate change are driving a shocking rise in hunger and malnutrition seen in many parts of the world. As weather patterns become more extreme and temperatures rise over the coming years, the global landscape will be dominated by social and environmental risks, including natural disasters and extreme weather events and large-scale environmental damage,⁵ which, when faced in combination, often result in widespread asset loss and hardship, while disrupting economic activity and public service delivery more widely. People will be slowly deprived of their livelihoods, which will likely drive migration to an ever-greater extent. These developments undermine social cohesion and social contracts, thereby threatening the stability of countries and entire regions.

For more than half a century, scientists have documented increasing evidence of how human activities have unbalanced our natural environment, leading to global warming,^{vii} and, since 1990, the Intergovernmental Panel on Climate Change (IPCC) has detailed these changes and evidence in exacting detail. However, progress to mitigate and adapt to global warming has been slow and limited, despite increasing political attention on the links between climate change, displacement, hunger, and security. Today the scale and cascading impacts of climate change mean it is increasingly described as a security issue and threat multiplier to violent conflict and, as a result, is occupying the minds of media, policy and national security experts worldwide.

There has been a growing body of research that links climate change and conflict, with the 2007 IPCC Fourth Assessment Report recognising the potential for climate change to contribute to conflict^{viii} and the 2014 Fifth Assessment

Impacts of climate change on elements of human security and the interactions between livelihoods, conflict, culture and migration



reproduced from Adger et al, 2014.

⁴ The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. See: UN (1992) United Nations framework convention on climate change, Article 1 Point 2. p7.

⁵ i.e. between 2023 and 2025. As per the World Economic Forum's (WEF) Global risks perception survey 2022–2023. See: WEF (January 2023) The global risks report 2023, 18th edition, pp14–15.

Report highlighting four ways in which climate change threatens human security: undermining livelihoods, eroding culture, unplanned migration and challenging state capacity.^{ix}

In Syria, an unprecedented drought in the late 2000s uprooted millions of people from rural areas. Combined with growing food insecurity, political upheaval and repression, these developments played a part in spurring Syria's civil war.^x In south and southeast Asia, India, Pakistan, Indonesia, and the Philippines are all experiencing rising sea levels, increased rainfall variability, and more intense weather events. In some places there has been a notable increase in resource-based violence and armed insurgency, especially where there is limited government reach and support.^{xi}

With natural resources and assets^{xii} such as food, water, and agricultural and pastoral grazing land set to become even more compromised in the years ahead,^{xiii} the world will likely see an increase in both the number and severity of conflicts. Existing conflicts, driven by displacement, rapid urbanisation, corruption, and poverty, will become more complex and aggravated as families are displaced or struggle to grow food to feed themselves in the face of climate hazards. This risk is particularly evident as conflicts become more protracted, with an average conflict duration of more than 30 years.^{xiv} Regions where people are already facing acute food insecurity, socioeconomic inequality, ethnic divisions, and/or ideological divides, are particularly at risk.^{xv} In Cox's Bazar in Bangladesh, an area that is already experiencing the effects of rising sea levels and increased salination,^{xvi} 'the growing multifaceted needs of Rohingya refugees have compounded existing socioeconomic challenges for host communities, exacerbating pressures on public services, infrastructure, and the environment.^{xvii} And, in countries like South Sudan, environmental damage caused by war is multiplying human suffering and prolonging and complicating post-conflict recovery.^{xviii}

Loss and damage caused by climate change threatens lives and livelihoods, especially for children in countries in the Global South. Countries already suffering from 'food

crises [have] additional underlying drivers that contribute to acute food insecurity and malnutrition, such as conflict and climate shocks'.^{xix} For children living in fragile contexts, their lives are at an even greater risk of adverse consequences and heightened vulnerability to climate change-related events, due to their reduced resilience and the limited capacity of their governments to invest in preventative measures.

Every child has an inalienable right to safety, water, food, shelter and education; yet, the fundamental impacts of climate change directly threaten the rights of children. The half a century of scientific research into the effects of climate change have also mostly been a half century of inaction. Despite well-intended aspirations to keep global warming to 1.5°C,^{xx} we are already seeing momentous rises in global hunger,^{xxi} historic numbers of people forced to flee their homes,^{xxii} and the highest numbers of violent conflicts since World War II,^{xxiii} even before the recent unrest in Sudan, coup in Niger and significantly increased violence in occupied Palestine territory and Israel. These increases in conflict, hunger, and displacement cannot be wholly attributed to the effects of climate change, but they are clearly linked, as noted by the UN Security Council resolution 2417 more than five years ago.^{xxiv} Without ambitious action to change course and help countries find conflict-sensitive mitigation and adaptation strategies to avert the most disastrous consequences for people and the planet, we will struggle to protect children and achieve the Sustainable Development Goals (SDGs). The global community's current lack of action on climate is disrupting livelihoods and education, increasing hunger and malnutrition and increasing risks of violence against children.

This research uses field data to show that **climate-linked conflict, displacement, and food insecurity are already happening, and in a wider range of contexts than commonly thought.** It aims to shed light on ordinary community members' perceptions of its effects and how these phenomena vary across contexts around the globe.

FRAMEWORK AND METHODOLOGY

The sixth IPCC assessment report in 2022 found that people who are more vulnerable, or more exposed to the risks and impacts of climate change, feel the impact of extreme weather events more severely. In the context of climate change, risks can arise from potential impacts of climate change and/or conflict, as well as human responses to climate change and/or conflict. Risks and impacts are influenced by economic, social, geographical, demographical, cultural, governance and environmental factors, and relevant adverse

consequences or impacts including those on lives, livelihoods, health and well-being, economic, social and cultural assets and investments, infrastructure, services (including ecosystem services), ecosystems, and species.

This study's framework uses the IPCC definitions of hazards, exposure, and vulnerabilities to describe the risks and impacts of climate and apply these to conflict

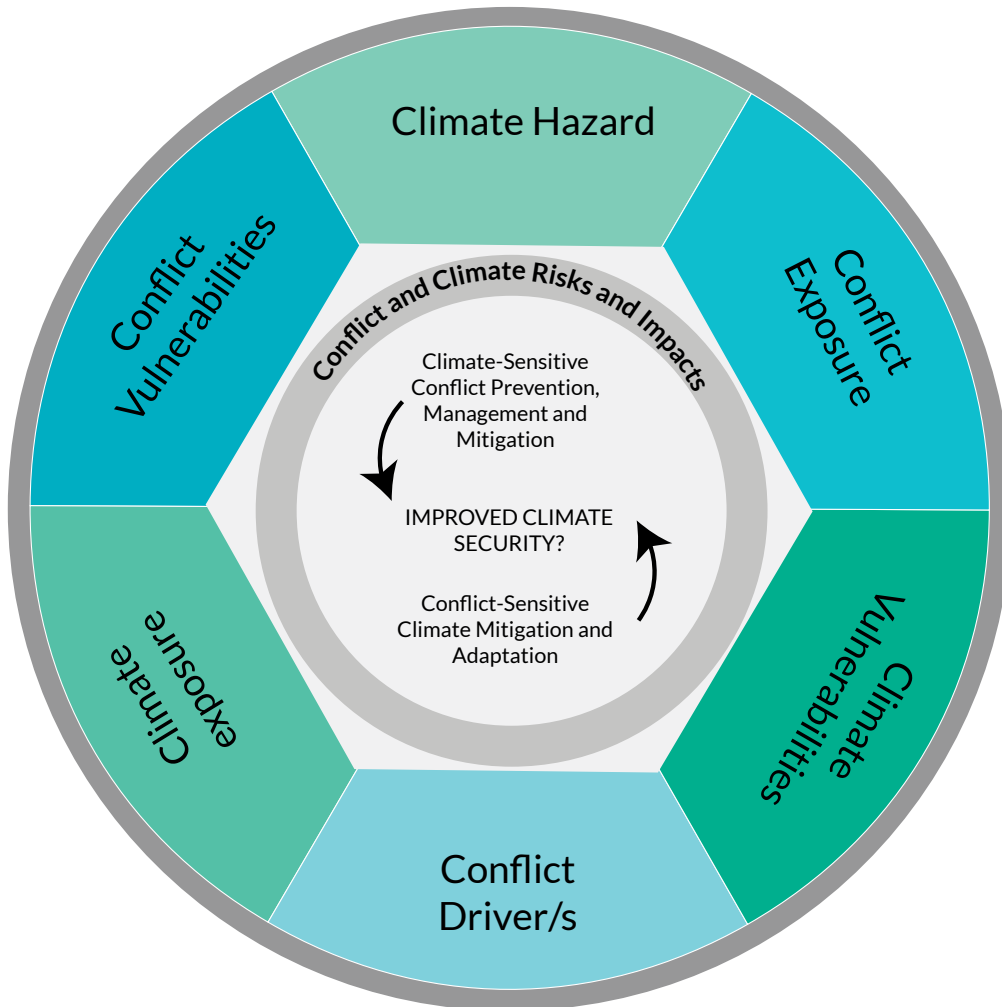


Figure 1. Climate change and conflict risk and impacts framework developed by Celestine Procter

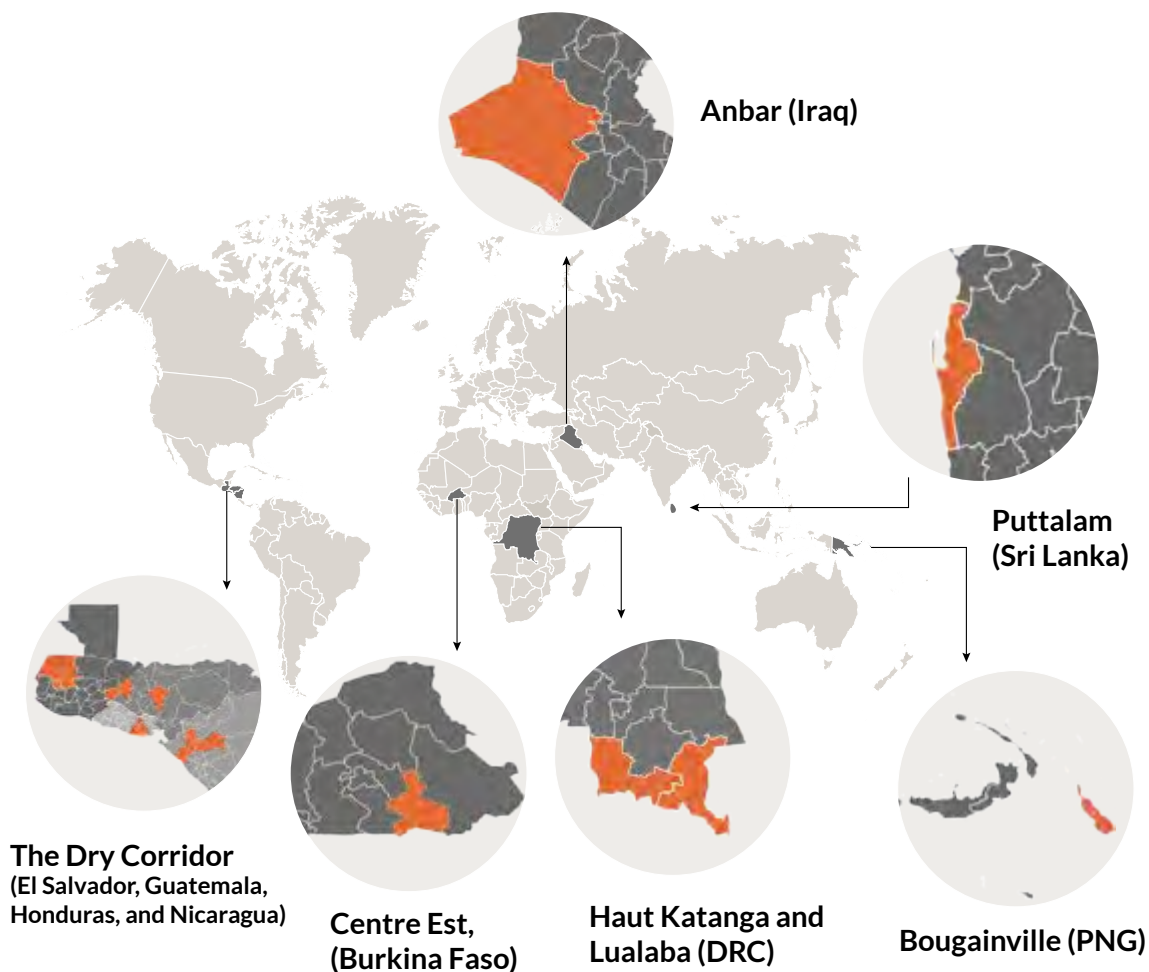
Report methodology

This report is based on an initial literature review conducted by World Vision Australia in 2022, which identified four main interconnecting pathways between climate change impacts and conflict:

1. decreasing livelihoods
2. scarce agricultural and pastoral land – e.g. increased migration, conflict over land
3. elites exploiting resources and vulnerabilities
4. tactical considerations of armed groups.

Nine World Vision offices took part in this research, which has been grouped into six distinct case studies. Offices were selected for inclusion based on capacity, relevant exposure to climate, conflict, and hunger, and geographic spread. Each office identified a specific region within their country (or region, in the case of the Dry Corridor). Findings should thus not be generalised to the countries as a whole but only to the areas of interest, which were as follows: Centre Est in Burkina Faso, Haut Katanga and Lualaba in the Democratic Republic of Congo (DRC),⁶ Anbar in Iraq, Bougainville in Papua New Guinea (PNG), and Puttalam in Sri Lanka. Findings from a range of urban, rural, and indigenous communities in El Salvador, Guatemala, Honduras, and Nicaragua are grouped as the Dry Corridor.

Figure 2. Countries and regions studied



⁶The historical province of Katanga was divided into four new provinces in 2015; two of which (Lualaba and Haut Katanga) were included in the research. However sometimes in the report we refer to 'Grand Katanga' for ease of reference.

This report does not aim to provide scientific data on climate hazards or the presence of violent conflict in the specific areas; that information is already widely available. Instead, the methodology is designed to focus on how communities are experiencing these effects, and answer the primary research question: What are the risks and impacts of climate change on conflict and hunger? This is supported by three additional sub-questions.

1. How is Climate Change affecting conflict and what trends/differences are apparent by country?
2. How does conflict exacerbate climate change risks and impacts and vulnerability to hunger?
3. What pathways and policy recommendations can help build resilience to these risks and impacts?

Initial scoping and development of the research methodology took place in June and July 2023, ahead of field data collection in August and September 2023. An initial qualitative questionnaire was developed to test the pathways identified in the desk research, used in phase 1 to validate the hypothesis before moving to larger data collection. World Vision teams in each country conducted between four and six key informant interviews (KIIs) in Phase I and up to 10 KIIs, six focus group discussions (FGDs) and 300 household surveys under Phase II (see below). All KIIs and FGD participants have been anonymised in the attribution of quotes due to the sensitive nature of the topics in some countries. Phase I provided a scoping and validation for the questions that were then used in Phase II. Table 1 provides a breakdown of interviews by location and category.

Table 1. Interview location and categories

	Household survey	KII			FGD		
	Total	Phase I	Phase II	Total	Phase I	Phase II	Total
Anbar (Iraq)	301	4	5	9	0	8	8
Bougainville (PNG)	297	3	7	10	0	6	6
Centre Est (Burkina Faso)	309	2	8	10	0	8	8
Dry Corridor (El Salvador, Guatemala, Honduras, and Nicaragua)	1,247	12	18	30	0	25	25
Lualaba and Haut Katanga (DRC)	303	9	4	13	0	3	3
Puttalam (Sri Lanka)	259	5	8	13	0	7	7
TOTAL	2,716	35	50	85	0	57	57

KEY FINDINGS

Community experiences of climate hazards

Over the past decades, scientists and policy makers have developed a wide body of evidence of how weather patterns and average temperatures are changing, but there is still limited information available on how communities are actually experiencing these hazards. It was clear from the survey findings that communities were keenly aware of climate change and already feeling its effects; **86% respondents thought climate change poses a serious issue for their communities and 83% thought climate change poses a serious risk to them and their families.**

Experts and community members highlighted that many communities weren't just experiencing a single impact of climate change, but multiple hazards simultaneously. In the Dry Corridor, respondents spoke of 'drought, hurricanes, floods and storms', while in Puttalam they were affected by 'drought, monsoon and floods'. It was only in Anbar, in Iraq's arid west, that a single effect – drought – was identified. The following graph shows the proportion of concern for each climate hazard; 'most concern' is the highest rating and aggregate concern represents the combined total of 'most, high and medium concern'.



Focus groups in all six locations highlighted the impact of rising temperatures and heat waves. This was supported by survey data, with 42% community members stating heat waves were of 'most concern', the third highest proportion behind drought (57%) and rainfall pattern changes (48%), both climate phenomena heavily influenced by heat. Interview respondents spoke of 'excessive heat', 'hot flashes', 'extensive heat waves', and 'temperature increases' as being enormously problematic both in terms of the direct impacts such as 'water scarcity', 'crop failure', and 'health issues', as well as indirect impacts including 'rising sea levels', 'desertification', 'wildfires', and 'biodiversity loss'.



Extreme and prolonged temperature increases and reduced rainfall give rise to longer dry periods and, ultimately, drought, which was the most commonly ranked climate hazard of 'most concern' by survey respondents. Focus group participants and key informants in all six areas considered drought a key threat to communities, with many emphasising the increasing frequency and severity of droughts.

Figure 3. What climate hazards are of greatest concern to you in your area?

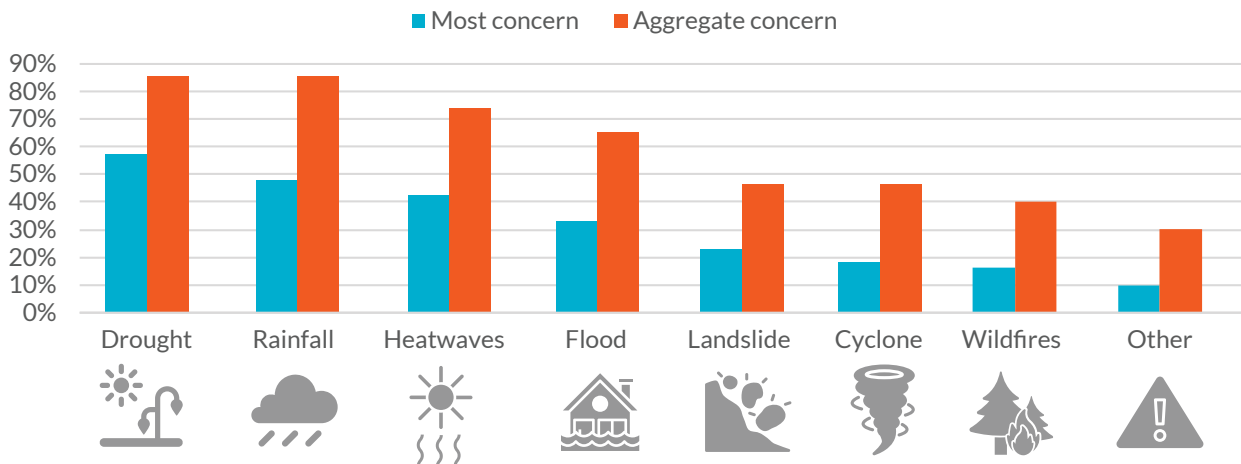
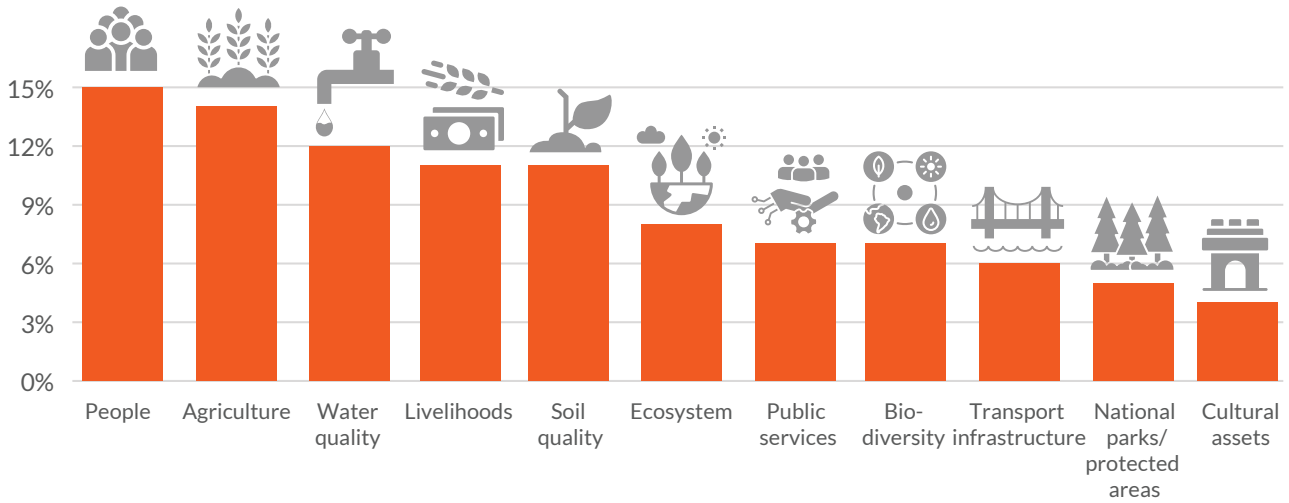





Figure 4. What elements are most exposed to climate hazards in your area? (Aggregate percentage rated as ‘most concern’)



Respondents also highlighted the cascading impact of drought on the local environment, including the risk of flash floods occurring due to strong rains following a drought. One local government official from Anbar stated that, “desertification is deadly in these months, leading to high[er] temperatures instead of green land dominated by clean air, which helps to lower temperatures.”

 Community members and experts also highlighted increased rainfall as a significant climate hazard. Particularly in Bougainville, Grand Katanga, and the Dry Corridor, interviewees frequently raised the issue of floods, ‘heavy’ and ‘continuous’ rainfall. Survey findings suggest flooding is of ‘most concern’ for 34% of families.

 In areas that are particularly hilly or mountainous such as Bougainville and the Dry Corridor, people also highlighted the risk of landslides as a consequence of drought, deforestation-led (or related) soil erosion and heavy rains. More than one-fifth (22%) of people rated landslides as a climate hazard of ‘most concern’ in their area.

 Almost half of all people surveyed (48%) ranked variations in rainfall patterns as of ‘most concern’. Interview findings reinforced this with key informants in all six locations raising concern over the ‘irregularity of rainfall, the temporal ‘shifting of seasons’ and variation in their length, as well as ‘changes

in intensity levels’. Focus groups lamented the severity of the unpredictability of rainfall in terms of their safety, livelihoods, and economic security, food security and health, and even cultural practices. Community members in Puttalam posited that rainfall variation has,

“ ‘affected the social lives and the economic status of families. The inability to continue agriculture has directly affected the household income. With the depreciation of [the] Sri Lankan currency, expenses are very high and it is very hard for almost all to manage family expenses. They go for loans but still they are not able manage the family affairs mainly due to the low income of the families’.

Community leaders in Centre Est highlighted the interrelation between rainfall pattern variation and seasonal migrations, stating rainfall pattern variation will ‘weaken and degrade the soil. Degraded soils will lead to low production yields and even a reduction in exploitable areas; for livestock farmers, [this] will lead to a reduction in grazing space. This will cause the Fulani, who are the breeders, to migrate south because the animals won’t have enough food’.

Overall, nearly one in five (18%) of respondents rated ‘tropical storms’ as ‘most concern’, rising to 22% in PNG and two-thirds for aggregate

concern in the Dry Corridor. Focus groups and key informants in every study location besides Anbar also expressed concern over changing wind patterns and tropical storms. In the Dry Corridor, interviewees raised the vulnerability of human populations within the hurricane corridor due to 'loss of life', 'infrastructure damage', and 'agricultural losses'. In Puttalam, 'livelihood disruption' and 'groundwater contamination' were a feature of discussions regarding tropical storms, while winds, on the other hand, were said to have reduced in recent years.



Many experts and community members also spoke about human activities that contribute to environmental degradation, with slightly different negative coping strategies between locations. Out of the people who selected the option of 'other' when asked to rank climate hazards of greatest concern, 17% highlighted human activities which were negatively impacting the environment.

- deforestation to support agricultural production and animal farming, firewood production, timber exportation and urban development in the Dry Corridor
- mining activity in Lualaba and Haut Katanga causing air and water pollution, deforestation, soil erosion and biodiversity damage
- desertification caused by human migration, poor land management practices and conflict in Anbar
- ecosystem damage and biodiversity loss in Puttalam due to overfishing and aggressive fishing practices, water pollution and limited community engagement in decision-making processes
- environmental degradation in Centre Est due to human migration (as a result of conflict), transhumance, inadequate environmental protections, including governance, and logging
- overpopulation leading to the clearing of land, resource pressures and increased infrastructure and service provision in Bougainville.



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Community experiences of conflict drivers

Current consensus holds that climate change does not create conflict where it does not currently exist, but instead interacts with and exacerbates existing grievances, both violent and non-violent.^{xv} Understanding these underlying conflict drivers is a necessary first step to grasping how they are linked to climate change.

Similar to climate hazards, drivers of conflict are usually multifaceted and interconnected, incorporating social, economic and political aspects. As one community leader in Anbar explained in a focus group:

“The abundance of conflict exists because of differences. When a change in climate occurs, there will be a difference not only in conflict, but also over lands, and also a difference in people’s access to financial assets. The slightest climate change will lead to an increase in the intensity of conflicts. There are parties that want to reach us and exploit climate change for this purpose and increase the intensity of the conflict.”

Social drivers of conflict

Migration and displacement play a key role in the emergence of social conflict. Significant demographic changes caused by rapid urbanisation and displacement have led to increased density, overcrowding, and pressure on existing resources in each of the six locations. In the Centre Est, the influx of displaced families from the conflict-ravaged north creates pressure in the face of dwindling resources, while in Lualaba and Haut Katanga families relocate due to mining concessions or in search of accessible land and/or water as a result of population growth and environmental degradation. In Bougainville, population growth and urbanisation have, for many respondents, resulted in ‘over-population’ in areas lacking adequate services. In the Dry Corridor, economic migration northward has weakened social cohesion, while unplanned

urbanisation is leading to further environmental damage and resource pressures. In the words of a community member in Anbar, drought, environmental degradation, and the hostilities surrounding the rise of the Islamic State group have forced population movements, leading to ‘land congestion, as well as crowding of people in specific areas, which causes religious and political conflicts’. In Sri Lanka, the Puttalam region is home to a large internally displaced population as a result of the civil war that ended in May 2009. While respondents noted the relatively harmonious relationship between host and displaced families to date, they also acknowledged the risk of conflict in the future due to increasing resource pressures.

Political drivers of conflict

Political schisms, often aligned with social structures, are commonly recurring drivers of conflict. The politicisation of caste, tribe, ethnicity, or religion, and the manipulation of these social structures for political and economic gain, is responsible for the creation of division between and within communities across all six case study locations. As resources become scarcer, the pursuit of political control over these resources elevates the risk of conflict. A conflict specialist in Puttalam noted:



“ The spirit or understanding of ‘serving the people’ is gone, and the relationship seems to have changed. They started behaving like small feudal officers presenting themselves as very powerful people, who can deliver not only programmes, but also physical goods and privileges. The people have in a sense forgotten . . . the idea that we give power to the politicians and the politicians also do not remember that they get power from the people. At the grassroots level, people go and vote to see if they can get a personal connection with the politicians, with their groups, with their closest stakeholders for their gains. So, it’s a really bad situation as people have ‘politicised’ in a bad manner, the whole idea of politics as a way or idea for collective good has now been erased.

Governance deficits further compound these issues, particularly when services and resources are provided or denied along lines of ethnicity, religion, or political affiliation. In Centre Est, corruption and poorly implemented regulations lead to sub-standard residential construction and infrastructure development, creating tensions over resource pressures; while in Bougainville, unequal distribution of basic services has led to resentment between communities

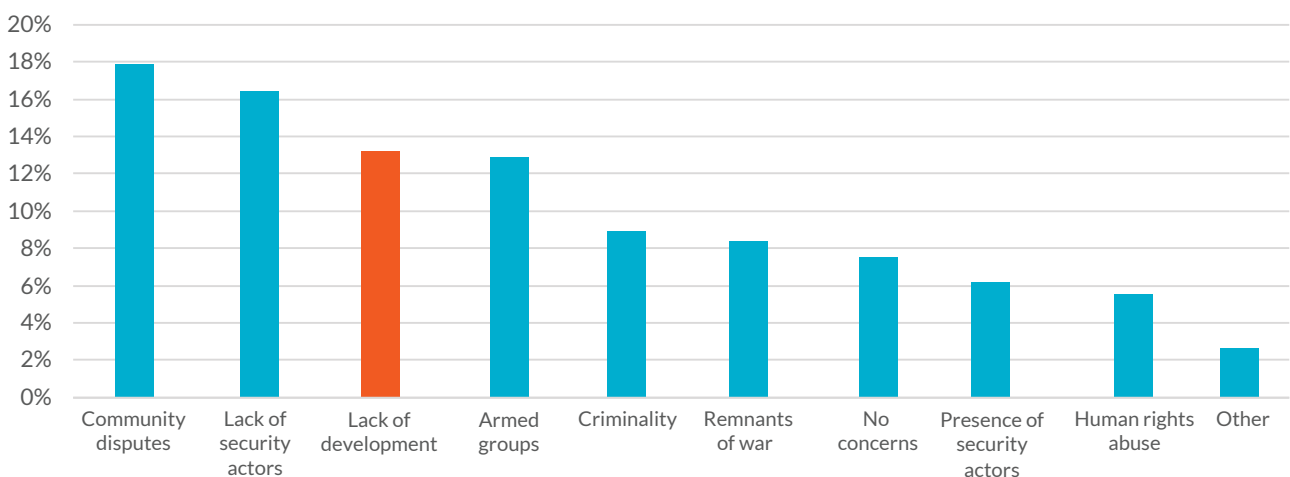
and a grievance towards the state. A ‘lack of development’ was cited by 13% respondents as a key security concern; recent protests in Iraq,^{xxvi} Burkina Faso,^{xxvii} and Sri Lanka^{xxviii} testify to this.

Economic drivers of conflict

The sheer threat of hunger or loss of livelihood also plays a major role in driving conflict. A member of one focus group with faith leaders in Centre Est stated, ‘it’s poverty that causes it. The lack of work means that people can’t feed themselves, and that’s what creates conflict’. Interviews with local government officials in Bougainville revealed the role unemployment and poverty play in rising instances of petty criminality, such as theft, leading to cycles of revenge and ongoing communal conflict. Likewise, in the Dry Corridor, unemployment has increased the ‘potential to enter what is called the criminal economy, that is, robbery, prostitution, human trafficking – these are key factors that generate social violence’, according to one academic. In Anbar, competition for limited employment drives tensions in communities, while in Puttalam, unemployment and poverty are fuelling migration and urbanisation, which in turn contribute to tensions.

Interviewees in every country clearly identified how the use of negative coping strategies in the face of economic stress – such as cutting water pipes to access water, cutting trees for firewood, or overusing communal land – sparks conflict and

Figure 5. Respondents’ main concerns affecting their security



can further degrade their natural environment. Furthermore, 11% of survey respondents admitted to using such conflict-exacerbating strategies themselves to deal with the impacts of climate change.

Resource competition over land and water

Natural resource competition is a particularly salient form of economic conflict drivers when considering climate-conflict linkages. Interviewees and survey responses in all six case study locations cited issues associated with water and land as key conflict drivers, and what was surprising was that water and land conflicts were much more common than ethnic or sectarian conflicts in our study, despite popular perceptions.^{xxix}



Water is a critical resource that can drive conflict due to issues of scarcity, degradation and governance. Water scarcity wreaks havoc within and across communities, pitting different groups against each other in competition over an often-dwindling resource. As one civil society representative in Centre Est emphasised, ‘We are leading to a scenario in which there will not be enough water to supply us all, which will generate different conflicts over access to water. Although we are not yet reaching an armed conflict of this

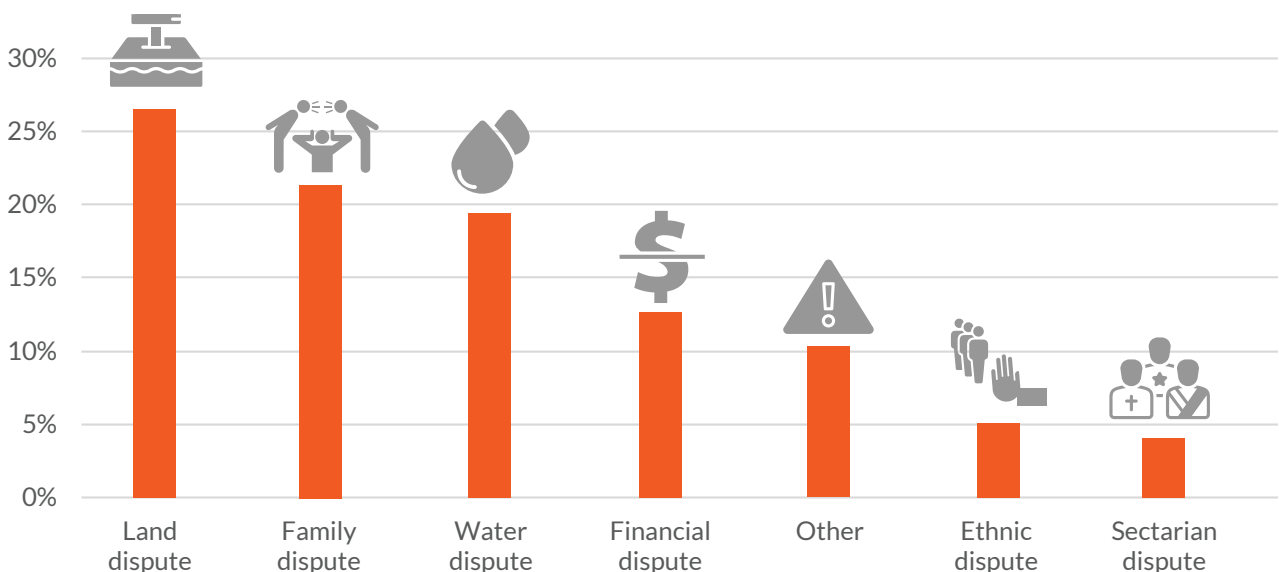
type, but we are reaching an increasing social conflict, in the sense that more communities in cities and rural areas will not have access to water, and this is really something that should concern us more’. Over a third of respondents (35%) said they had experienced some form of conflict in the past 12 months, and of those, 20% reported that water disputes were to blame, ranking them third behind land and family disputes (27% and 21% respectively). More than twice as many respondents reported water-linked disputes than ethnic or sectarian disputes.

“Many experts predict that the next world war will not be over oil, but over water. Water is directly related to climate change.” – Climate change specialist, Dry Corridor

Water scarcity forces difficult choices across all levels of society. At the household level, water scarcity can drive familial conflict over decisions of prioritisation (drinking water versus agricultural use). The collection of water from communal water points can result in conflict over queuing and distribution, while women and children can face personal security risks when having to travel far to access water.

Water demand also creates conflict between farmers and pastoralists, and between small-

Figure 6. Causes of conflict witnessed within the past 12 months in their community



scale producers and industrial agricultural and livestock operations. Across all six case studies, respondents observed increased conflict between upstream and downstream communities over control and access to water for irrigation. Competition for access between crops and livestock also features heavily. As pasturelands diminish in size and quality because of drought and wildfires, herders are forced to move further afield to access pasture and water for their herds. In Puttalam and the Dry Corridor, this can lead to localised conflict as clashes occur between agriculturalists and headers in the same area; in Anbar, it drives movement and conflict across governorates, and in Centre Est, across national boundaries. Increased water pressures in areas with water-dependent livelihoods leads to migration, which in turn, can lead to conflict and tensions in destination locations.

As one climate change specialist in the Dry Corridor reflected, 'it is getting more difficult every day, there is more pressure on resources, there are fewer resources and there are more people, and this generates conflicts over resources, and this will continue to advance'.

Respondents also highlighted conflict over resources between communities and larger-scale commercial operations. In Lualaba and Haut Katanga, the 'pollution of water sources and rivers by mining companies' was identified as a key factor in increasing tension between farmers and miners by one climate change specialist. Similarly, multinational corporations engaged in tobacco production and cattle raising in the Dry Corridor were said to play a central role in generating conflict with local farmers, herders, and communities due to very high levels of water demand and sustained water pollution due to the intensive use of agrochemicals.



Land disputes were ranked as the main cause of conflict in their area by more than a quarter (27%) of survey respondents, and commonly mentioned in interviews in all six locations. Interview respondents in Centre Est said land

disputes were a result of family disagreements and historical usage, while those in Bougainville repeatedly raised the issue of boundary disputes as being the main cause of intra- and inter-clan and tribal violence. In Lualaba and Haut Katanga, the appropriation of land from community members for mining and commercial agriculture and subsequent encroachment onto community forests, has decreased food security and led to the relocation of villages, fuelling protests and resource pressures in other areas. Inter-communal boundary disputes in the Dry Corridor have led to land seizures, inter-communal violence, and disputes with local governments.

Conflict over land ownership and usage are also notable for their feedback loop with migration. As land disputes drive intra- and intercommunal violence, out-migration increases as individuals flee the conflict. However, wherever displaced people make a new home, there is a risk of conflict over scarce arable land with host communities. Where scarcity is acute, or conflict management mechanisms are inadequate or absent, a new conflict can emerge, sparking yet another wave of displacement.

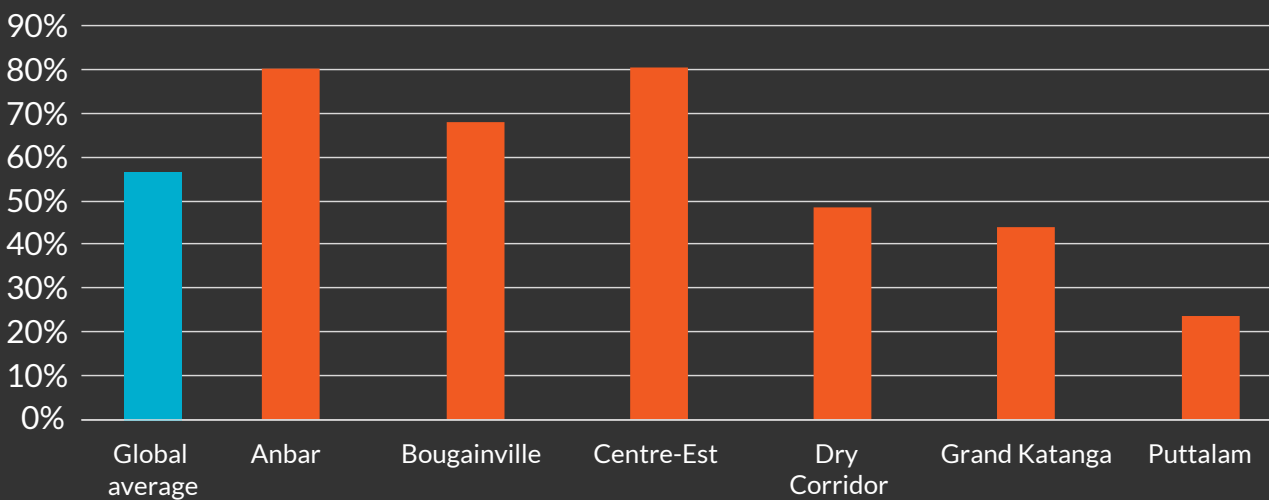


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Climate change and conflict

The perceived interaction between climate change and conflict was clear for community members; of survey respondents, **more than half (54%) thought climate impacts are creating conflict**, and **60% somewhat or completely agreed that ‘the impacts of climate change are worsening existing conflict in my area now.’** The areas that are more exposed to climate hazards were more likely to say climate impacts are creating conflict,⁷ with 79% people in Anbar or Centre-Est agreeing, compared to just 23% in Puttalam.

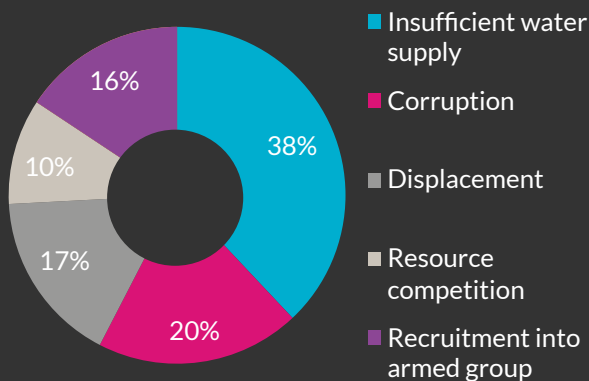
Figure 7. Respondents’ perceived interactions between climate change and conflict



The majority of respondents also saw the links between climate and conflict as something that was likely to continue to have an impact on their community into the future; 61% agreed that ‘if the negative impacts of climate change increase, conflict in my area will increase too.’ However, they also saw a reason for hope - 60% said that ‘if the negative impacts of climate change reduce, conflict in my area will reduce too,’ - a statement which should surely motivate donor and government funding of conflict-sensitive adaptation and mitigation programming in the communities. Interviewees outlined the connection between climate and conflict via a number of pathways, including water, corruption, and displacement.

⁷ Iraq and DRC do not totally fit this pattern, but it holds for the other contexts. The area of research in DRC experiences significant environmental degradation due to mining, which is related to adaptation strategies locally as well as mitigation strategies in most developed countries, but this link was not always front of mind for community members. In Iraq, Anbar province is experiencing some of the highest rates of water stress nationally, and worst case GHG emissions projections predict an over 40% decrease in water availability. Water was one of the main causes of climate-related conflict globally according to survey respondents. According to rankings on ND-GAIN Index: 182 – DRC, 167 – Papua New Guinea, 161 – Burkina, 142 – Honduras, 137 – Nicaragua, 126 – Iraq, 119 – Guatemala, 108 – El Salvador, 104 – Sri Lanka

Figure 8. Reasons for climate-related conflict in respondents' communities



Threats to food security, agriculture, and livelihoods

The threat of hunger or loss of livelihood was clearly the dominant mechanism through which respondents linked climate change and conflict. This echoes the findings of the 2014 IPCC fifth assessment report, which names livelihoods as one of the four main pathways through which climate change can undermine human security.^{xxx} Food production (especially agriculture, pastoralism, and fishing) is intensely exposed and vulnerable to climate change, and in subsistence economies without safety nets, disruptions to food production and incomes are a matter of life and death.

Climate and livelihoods conflict

In the survey data, 82% of respondents agreed⁸ with the statement 'climate change worsens my economic situation', and 72%⁹ named impacts to livelihoods when listing climate hazards. Similarly, when survey respondents were asked to rate 10 different aspects of daily life on a scale of least to most exposed to climate hazards in their community, aspects related to agricultural and pastoralist livelihoods¹⁰ made up almost half (48%) (see Figure 4).

“Climate change will weaken and degrade the soil. Degraded soils will lead to low production yields and even a reduction in exploitable areas; for livestock farmers, climate change will lead to a proliferation of various diseases in animals and a reduction in grazing space.” – Community Leader, FGD, Centre Est

The concern for climate’s impacts on livelihoods was echoed in interviews. Respondents pointed out how extreme weather events and unpredictable weather patterns are resulting in reduced yields, depletion of natural resources (particularly land and water), reduction of investments (due to lower incomes), and limited productivity (due to loss of work time). Female community members in Anbar pointed to the impact on livelihoods, stating that, ‘this is the first year we are witnessing 51°C and 52°C. The land dries quickly, and, in most places, burns, [so] methods must be taken to protect crops and large lands. This year, dates did not come in good proportions and some types of trees, such as oranges, were exposed to burning...the products were half edible and the other half spoiled’. Fish stocks, vital to the livelihoods and local economy in both Puttalam and Bougainville, are also affected by climate change. ‘The weather pattern of the area has been totally upside down. [There was] less annual rain, with no rain in 2022, and the rainy season is delayed. Heat is excessive and ground water levels are very low. The water level of the lagoon has gone down dramatically, and lagoon fishing yields are very low’, according to a focus group with female community members in Puttalam.

A climate change specialist in Sri Lanka clearly defined the links between livelihoods, climate, and conflict, stating that ‘climate’s variability and the increasing frequency of hazards majorly [affects households’] econom[ies] . . . when we have enough money to spend and do things, the conflicts are less. When money is less, conflicts are going to happen’. The threat of loss of livelihoods is a major motivator for conflict – and when livelihoods are under stress from climate change, the stakes rise even more.

⁸ either somewhat agreed (28%) or completely agreed (54%)

⁹ 17% loss of livelihoods, ‘reduced pastureland’ (14%), ‘crop failure’ (26%), and ‘difficulty accessing water/food’ (16%)

¹⁰ livelihoods, soil quality, water quality, agriculture

16% of respondents pointed to recruitment into armed groups as the primary way in which climate change is driving conflict in their areas. In locations with mass failure of livelihoods, gangs, armed or terrorist groups are able to recruit in large numbers – particularly where there are perceptions that the failure of the government or exploitation by dominant groups were responsible. One agricultural expert in Iraq summarised, ‘The lack of livelihood is the main reason for the danger. As a result, some of the population turn to terror, especially the emerging generation from 9 to 20 years old – due to the lack of education and awareness and the large rate of unemployment.’

A climate-driven hunger crisis

There is a clear perception amongst respondents that climate change has significant detrimental impacts on hunger, health, and well-being. Almost two-thirds (64%) of respondents completely agreed with the statement ‘Climate change increases the risk of hunger and food insecurity.’

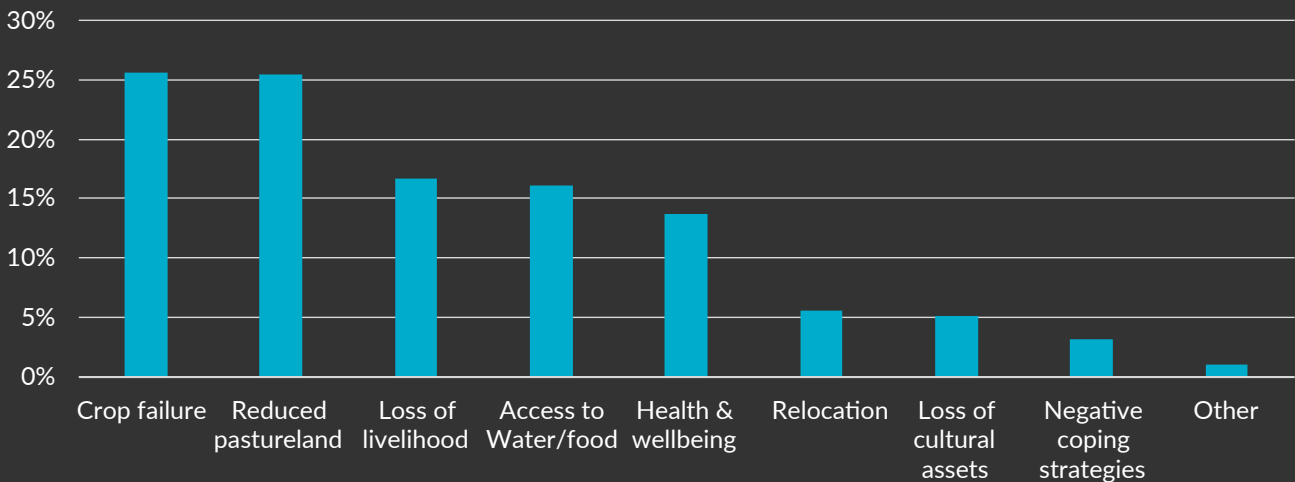
Excessive rainfall was cited as causing flooding, rotting crops, and soil erosion in the Dry Corridor

and Bougainville, while in Centre Est and Anbar drought has reduced crop yield and damaged the health of livestock. Reduced food supplies leaves people forced to skip meals or eat foods with lower nutritional levels, which in turn drives higher levels of malnutrition, starvation, and, in some cases, leads to instances of famine-like conditions.

For community members, the predominant means of coping with climate change is addressing these hunger impacts. When asked to name the main way that organisations (government, civil society, aid agencies, religious groups, etc.) had helped communities overcome the challenges of climate change, food assistance was the most common response from 29% of respondents – ahead of raising awareness (24%) or providing agricultural training (21%).

Over half (51%) of survey respondents reported that reduced access to food and water was a key impact of climate hazards, while 57% completely agreed that climate change increased the risk of hunger/food insecurity (this figure increases to 77% when ‘somewhat agree’ is added).

Figure 9. Negative climate impacts affecting respondents



As crop yields are reduced through either crop damage, land degradation, or water supply issues (e.g. due to flood, drought, or contamination) and production costs increase the price of agricultural and pastoral outputs, the cost of the basic food basket is increased. Inflationary pressures on food prices can then give rise to economy-wide inflation, particularly in places where the relative importance of the agricultural sector is higher. In the Dry Corridor, the risk associated with a climate-induced economic downturn and increased instability was highlighted by a community leader who stated that ‘due to the lack of resources and the increase of the basic food basket and fuel, it is likely that there will be conflicts in the future...Criminal groups could regain strength in the country’.

The role of chronic hunger in accelerating conflict was widely affirmed. In Bougainville and the Dry Corridor, community members commented that as food supplies become less secure, instances of theft invariably increased, which often created tension in communities. In Bougainville, one community member predicted that the increase in hunger and related diseases would drive a corresponding increase in sorcery accusations, which trigger violent rounds of attack and reprisal between communities.

Natural resource governance, corruption, and conflict

Access to water and productive land are critical for both food security and sustainable livelihoods and are considered a key cause of conflict across all contexts in this study. Globally, ‘insufficient water supply’ and ‘competition over resources (e.g. drinking water, irrigation, livestock)’ were identified as key reasons for climate-related conflict in local areas in almost half (48%) of responses (see Figure 8).¹¹ In Anbar, for example, interviewees said water scarcity drives communal conflict through the threat it poses to livelihoods, and community members in Centre Est described how herders and farmers would come into conflict over grazing land.

In Centre Est, the issue of competition between farmers and herders over access to fertile land

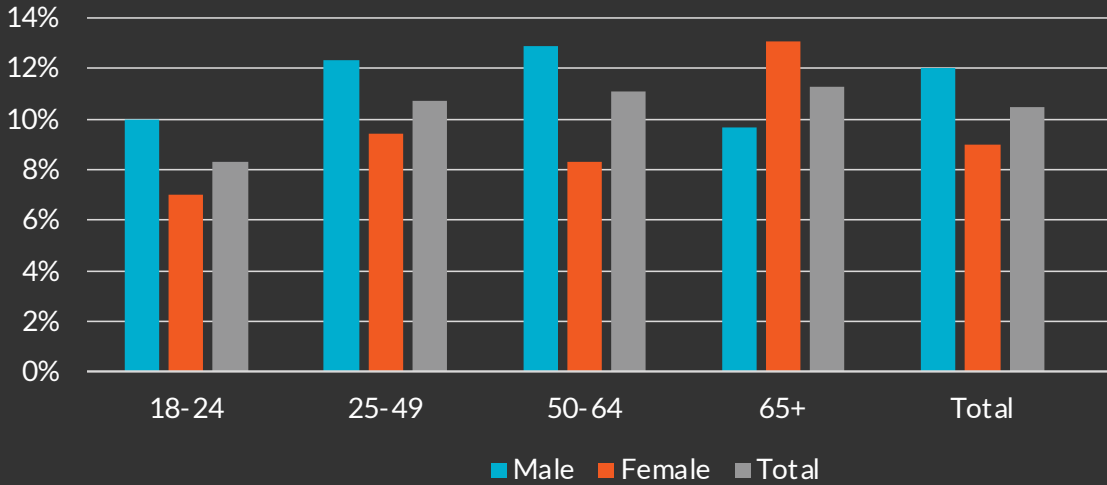
was prevalent. Access to grazing land in northern Burkina Faso, along with the extended conflict there, has led to increased cattle movements through Centre Est, bringing farmers and herders into close, and tense, contact. As one member of the private sector noted, ‘the main cause of conflict here is the lack of grazing land for the animals. As a result, we are always faced with quarrels between farmers and herders’. An agricultural specialist went further, arguing that this competition over areas for livestock and agricultural production ‘can be indirect causes [of conflict], because if tensions are exacerbated, if conflicts linked to survival and the exploitation of resources are frequent, this will contribute to weakening the social fabric, and if the social fabric is weakened, this means that the smallest opportunity can be a source of uncontrollable conflict’. About three out of five survey respondents (57%) from Centre Est reported changes in seasonal grazing patterns due to climate change, while only a quarter (24%) of respondents in the other five case studies reported the same.

However, the linkage between natural resources and conflict goes beyond pure scarcity. A key determinant in levels of natural resource conflict is the quality of governance of whatever resources are available, both within the community and by the state. In particular, the effectiveness of local leaders (formal and informal) to manage resource conflict is critical. Where community rules and norms over the management of resources are established, believed to be fair, and adhered to, communal conflict can be minimised (e.g. the Dry Corridor and Anbar). This is in line with the IPCC Fifth Assessment chapter on human security, which acknowledged that a perception of states as ‘effective and consistent’ reduces the risk of armed conflict.^{xxxii} However, in cases where government or leaders’ management of natural resources is viewed as discriminatory or unfair – preferential to one ethnic group over another, or to farmers over pastoralists, for example – opposition can be fierce.

One fifth of survey respondents identified corruption as the primary reason for climate-linked conflict in their area – coming second only to water disputes. Interview data sheds light

¹¹ Factoring out ‘don’t know’ and ‘other’ responses.

Figure 10. Respondents who believe resource competition fuels conflict (by gender and age)



on this somewhat surprising result. Although corruption is certainly not due to climate change directly, when increased resource competition is not managed well; corruption can further inflame tensions and conflict in the community. In this study, respondents highlighted the ‘lack of functional legislative frameworks’ creating a vacuum that can enable the emergence of corrupt, clientelist resource allocation practices. For example, the ‘privatisation’ and ‘deregulation’ of water is driving significant anger in the Dry Corridor, Anbar and Puttalam, as profits from increasingly scarce and valuable resources are prioritised over communities who feel abandoned by the government.

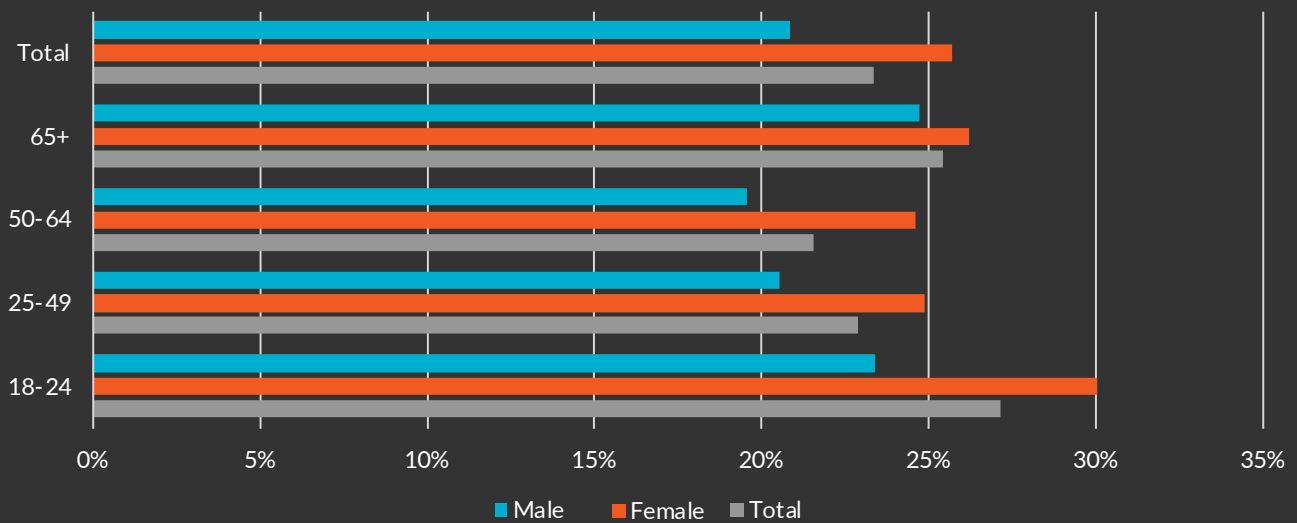
Respondents also discussed corruption more generally, in the sense of lax efforts by duty bearers to use regulatory systems to protect resources. A climate change specialist in the Dry Corridor called for local and national governments to recognise and work with informal community-based resource management structures such as water committees, forest committees, and ranger services to help reduce conflict-pressure, as they are at the centre of resource management. This view was supported by a climate change specialist in Centre Est who stated, ‘These customary rules are more credible and respected than the so-called legal and administrative rules. If there is a conflict, these

customary rules will not be respected, and this failure will destroy the environment as a whole, if not just the natural resources’. The absence of a national power that is perceived to be effective and consistent highlights the importance of empowering and supporting locally led conflict resolution methods and traditions, including customary chiefs and faith leaders. When done successfully, natural resource management can not only avoid conflict, but also be used as a building block to peace in areas where there is wider conflict.^{xxxii}

Feedback loops: Impact of conflict on livelihoods and food security

Once climate change has accelerated underlying livelihood-related grievances to trigger conflict, this conflict in turn degrades livelihoods still further. Almost a quarter (23%) of respondents think that conflict with other communities is preventing access to farmland, pastureland or water (see Figure 11). Fears for personal safety have a chilling effect on agriculture, as related by a government agriculture specialist in Anbar, ‘Any conflict that occurs in any area inevitably affects agriculture because the farmer does not plant for fear of farming, or he may be afraid of burning agricultural crops because of the conflict, and if the farmer does plant, it is in small quantities, and not to the amount as was cultivated in the past’.

Figure 11. Respondents who believe conflict prevents access to pastures or water (by age and gender)



Another local government official in Anbar expanded on conflict’s impacts on infrastructure and investments, saying that ‘conflict can disrupt agricultural activities by damaging infrastructure, causing landmines and unexploded ordnance contamination, and leading to looting and destruction of crops and livestock. The agricultural sector is essential for the local economy and food security. Investments in irrigation infrastructure are crucial for enhancing agricultural productivity but conflict-related damage to irrigation systems, landmines, and insecurity can disrupt agricultural activities and reduce income from farming.’

When conflict emerges, state investment in development, strengthening markets and agricultural support can be diverted to security forces, with significant impacts for incomes and food security even for households not directly engaged in agriculture. Capital outflow from conflict-affected local economies can occur; and even development assistance can be perversely reduced in regions facing increased risks of conflict. This can be particularly damaging, as an agriculture specialist in Centre Est, posited, ‘[Before the conflict] every effort was made towards development, towards actions that would lead to development, but today, all attention is turned towards the return of security. And this is not without consequences. When there is civil insecurity, we can no longer mobilise resources for development. If peace

[would] return, people will be better able to work together, mobilise resources, build capacity, and participate in the efforts of the government and NGOs [non-governmental organisations] to mitigate the effects of climate change and reduce its impact.’

Climate change, displacement, and conflict

Respondents almost universally agreed (99%) that climate change leads to displacement either from or to their community. Families displaced by the effects of climate change often arrive in new locations already under pressure, where host populations are struggling to absorb large numbers of new arrivals and are having to do so with limited support from the government. Increasing migration that people would have otherwise avoided is another of the pathways identified by the IPCC through which climate change threatens human security, and according to survey respondents, is tightly linked to another – compromising culture and identity.^{xxxiii} The influx of people from other areas, potentially from areas in conflict, and a greater squeezing of limited resources – infrastructure, housing, services, natural resources – can lead to simmering resentment, readily sparked into active conflict by a single incident. Descriptions of deforestation for new housing and the strain on water resources and basic services in and around Lubumbashi in the DRC were described in several interviews.

Climate-induced displacement also threatens cultural assets; the displacement of indigenous populations is of particular concern. In Grand Katanga and the Dry Corridor, especially, indigenous leaders are seen as the custodians of the environment and are tasked with ‘keeping alive the traditions that can promote respect for nature and mother earth’ (civil society representative, Dry Corridor). The loss of these people through climate-induced displacement and associated conflict has far-reaching implications. Rapid urbanisation throws different cultures together, creating the risk of cultural conflict and often forcing the need for the development of a merged culture adapted to the new environment. This represents a period of significant cultural turmoil and, in the absence of a mutually accepted culture, conflict can ensue.



Feedback loops: Conflict and displacement

Increasing conflict is, of course, a major driver of displacement in its own right; an eruption of conflict between displaced and host communities can prompt return to the place of origin or re-displacement to a new location, both likely to trigger conflict yet again. As one community member in Centre Est related:

“ I know some internally displaced people who came and were given a hectare or two to farm, but it didn’t work out. These people were forced to move to the Kankanmogo area, where terrorism found them. There are others who regretted it. They moved, believing that things would be better when they got there, but they ran into other problems. They came back to find that the space they had left was occupied. The poverty of the soil and the scarcity of rain mean that a lot of people move, especially in the Bagré area. Most people come to farm, but when they don’t have the space or the yield isn’t good, they go elsewhere. Many families have left. All this is due to climate change.

This pattern was reaffirmed by a security expert in the Dry Corridor, ‘Because there is no land and the means of production has been affected, people have to go around invading and have to settle in places where there is no legality. That generates other conflicts...there is no stability or security.’

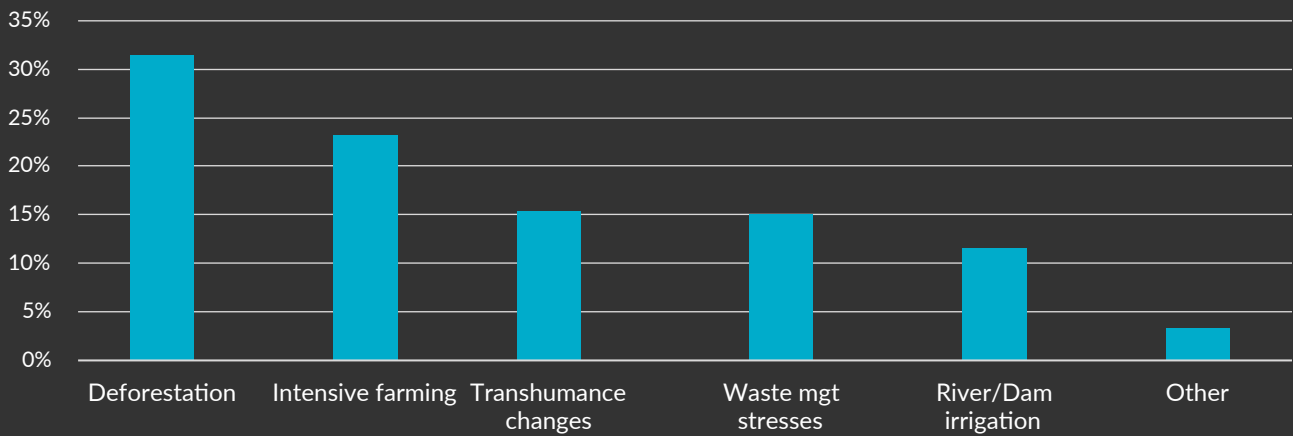
Negative coping mechanisms in response to climate hazards spur conflict

While climate hazards do contribute to conflict, human activities often compound climate hazards or create their own environmental pressures, which can drive greater levels of conflict. Most climate mitigation and adaptation actions are conflict-blind; the IPCC’s Fifth Assessment Report recognises that ‘poorly designed adaptation and mitigation strategies can increase the risk of violent conflict.’^{xxxiv}

Across the surveyed areas, climate-induced environmental changes were prompting communities to cope and adapt, including in ways that inadvertently drove conflict. (see Figure 12). The degradation of natural resources due to weak or absent regulatory control or direct government collusion with criminal organisations in the stripping of natural resource assets is driving insecurity and conflict. Deforestation, either through land clearance for commercial and small-scale farming (e.g. in the Dry Corridor and Centre Est) or mining (e.g. in Bougainville and Grand Katanga), is creating tensions within and between communities, between communities and the state, and between communities and the business sector.

In some cases, these alternative livelihoods were more likely to cause conflict. In Grand Katanga, key informants and focus groups frequently mentioned farmers whose livelihoods had failed due to climate change turning to work in the mines, which then further aggravated local tensions over land and environmental degradation. Interestingly, much of the demand for land for mining in Grand Katanga comes in part from mitigation efforts in other parts of the world which has driven the price of cobalt, a key battery component, sky-high.^{xxxv}

Figure 12. How community members think climate-induced coping mechanisms changed land use, environmental features, or natural resource management

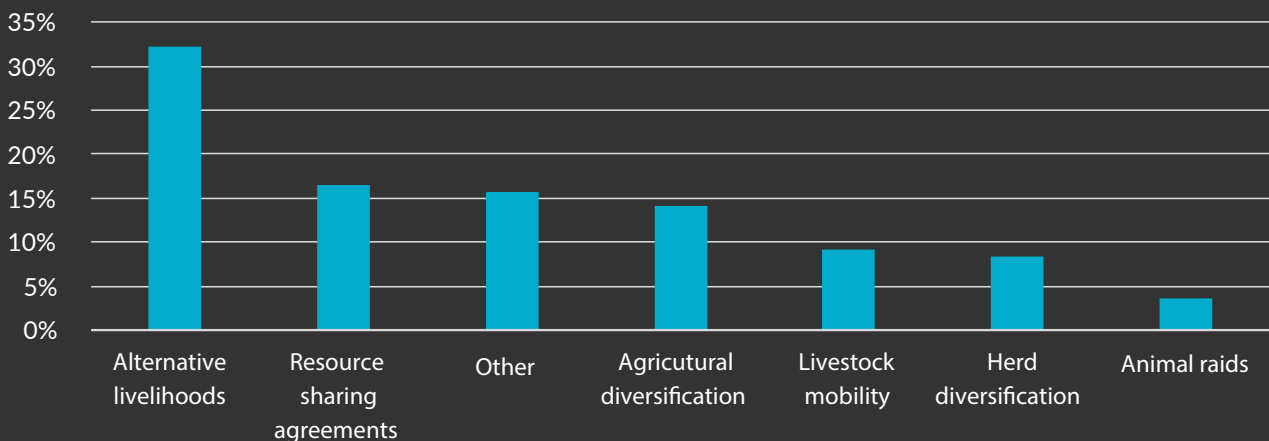


Pastoralist communities in several countries commented that in response to cattle death due to drought, herders sometimes engaged in raiding to replenish their herds. While only 4% respondents said their own community was resorting to animal raids (see Figure 13) in order to cope with climate hazards, almost one-third (32%) mentioned retaliations after animal raids, deaths during a cattle raid, and related displacement as consequences of actions taken to cope with climate change.

Changes in resource use patterns are also likely to cause conflict; 26% of respondents expressed concern for the consequences of deforestation.

Stressed households frequently take up charcoal production, which in addition to degrading local environments can cause tensions if trees are cut without permission. In Puttalam, depletion of fish stocks due to rising sea temperatures and overfishing is affecting household health and financial security, as well as forcing an expansion of the fishing zones which risk competition with other communities. Similarly, the reduced availability of bushmeat and foraged food in Lualaba and Haut Katanga is increasing food insecurity and forcing people into risk-taking behaviours and negative coping strategies, which can create societal tension.

Figure 13. What actions is your community taking to overcome challenges brought about by climate change?

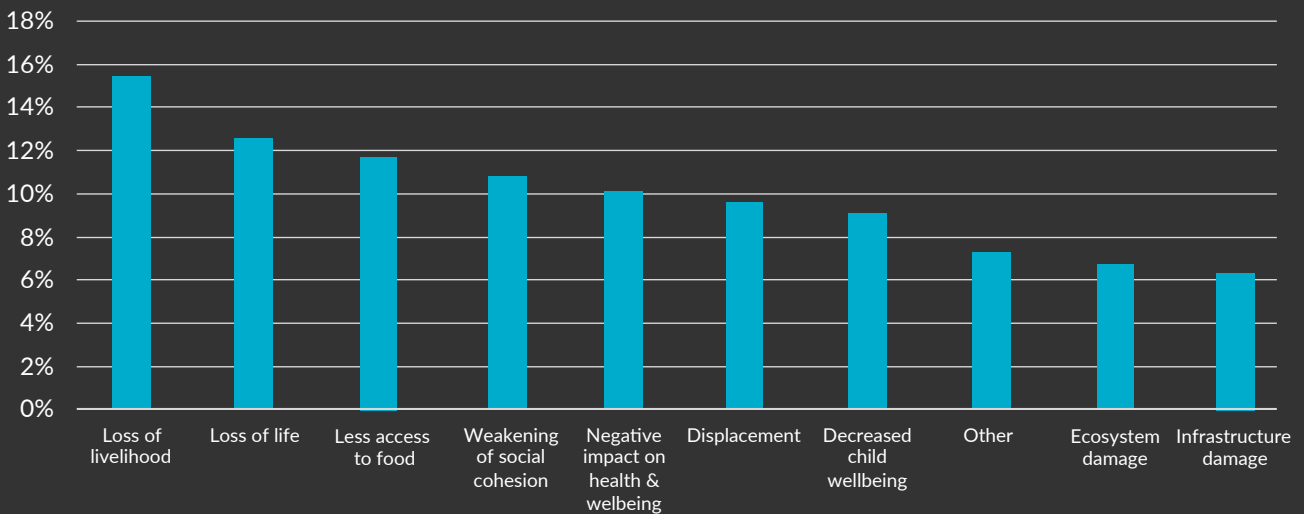




Feedback loops: Conflict increasing exposure to climate change

Survey and interview data show that climate hazards are exacerbating tensions and worsening conflict via a range of causal linkages. However, they also reveal that increasing conflict, in turn, worsens exposure to the impacts of climate change. This is confirmed by the IPCC Fifth Assessment Report which highlights multiple ways in which conflict limits communities’ ability to adapt to climate change, increases hunger, and accelerates environmental degradation.^{xxxvi}

Figure 14. Impact of conflict on respondents’ daily lives



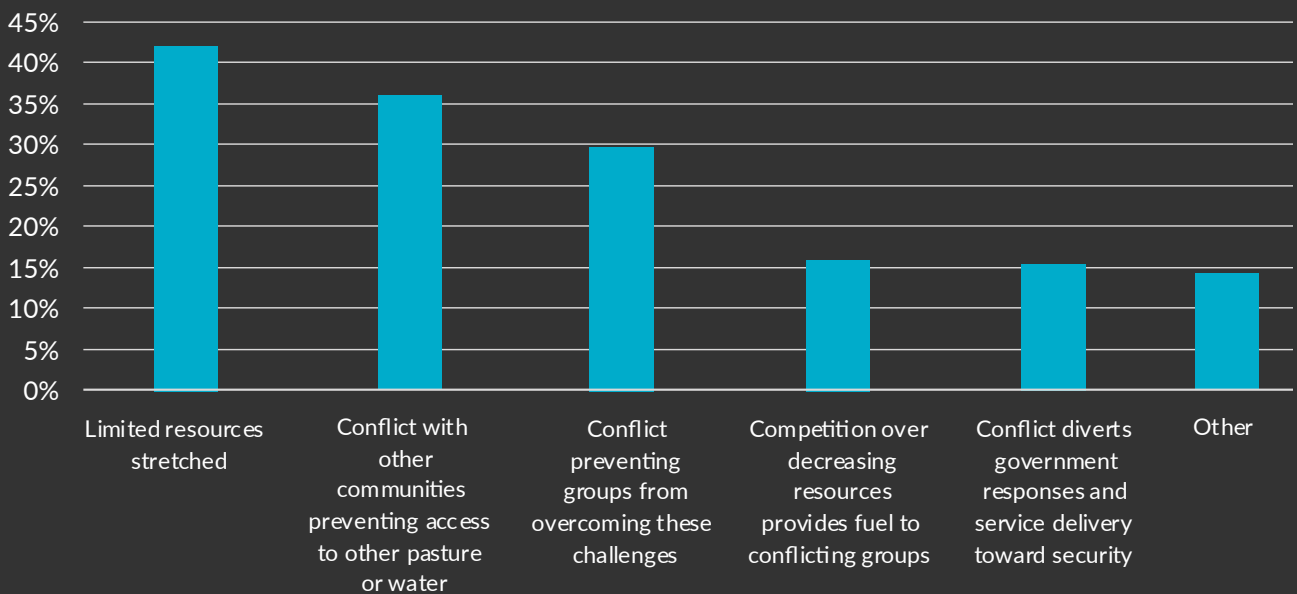
Across all contexts, conflict tends to cause environmental degradation, which can in turn worsen communities’ exposure to climate impacts. A local government official in Anbar aptly described the impact of conflict on the environment stating that, ‘conflict can lead to significant environmental damage, including the destruction of infrastructure, forests, and agricultural land. The release of greenhouse gases from the burning of buildings and vehicles, as well as other conflict-related activities, can contribute to climate change and can hinder efforts to manage and protect natural resources, leading to environmental degradation and deforestation ... illegal logging and poaching can increase in conflict zones, contributing to deforestation and loss of biodiversity’.

In the Dry Corridor, Centre Est, and Anbar, conflict has led to faster rates of deforestation contributing in places to desertification and increased temperature levels. Conflict and

displacement also undermine the governance mechanisms that manage natural resources. These systems, particularly informal ones, function on a basis of trust, social cohesion, and longstanding agreements, all of which can be swept away by bitter intercommunal conflict or high rates of in- and out-migration. Absent these systems, households under stress have no reason to refrain from overexploiting communal resources – resulting in yet more environmental degradation and exposure to climate hazards.

Challenges with insecurity also mean that funding resources are pulled into other priorities, particularly military investment, as mentioned in interviews in Lualaba and Haut Katanga. Out of survey respondents, 16% believe that conflict diverts government resources away from addressing climate action and towards the security agenda (see Figure 15). This deprioritisation of climate funding to locations already experiencing conflict can also be

Figure 15. Negative feedback loops



observed in global funding flows: the average resident of an extremely fragile context receives just US\$2.10 in adaptation support, compared to US\$113.80 per person in non-fragile contexts.^{xxxvii}

Finally, conflict impairs the ability of communities and institutions to come together and tackle the shared challenge of climate change. Mediation activities and formal peace processes can have a tendency to focus on the most immediate symptoms but fail to address the drivers of conflict that are less apparent (including climate hazards). Many initiatives are

either environmental focused, and therefore neglect the principles of conflict resolution, or conflict focused, and hence run the risk of leading to maladaptation in the climate space. Interviewees noted how difficult conflict and insecurity can make adaptation or mitigation efforts. In Bougainville, a climate change specialist noted that ongoing insecurity and land disputes between communities or with the extractives industry is a disincentive to adaptation and mitigation action. Ominously, survey responses show that **30% of people feel that conflict is preventing groups from overcoming climate challenges.**

RECOMMENDATIONS: How can the international community mitigate conflict and climate impacts?

Major political efforts are required to change course, mitigate and adapt to climate change, and avert the most disastrous consequences for people and planet. Even though commitments are regularly made and reaffirmed at the annual UNFCCC Conference of Parties (COP), the international community is still not on track to limit climate change and meet the aspiration of 1.5°C as set out in the 2015 Paris Agreement.¹² The US\$100 billion annual climate financing commitment from high-income countries to lower-income countries is also still unfulfilled, and although in principle, there is a ‘loss and damage’ fund agreed, its size, scope and governance is yet to be determined.

Human-induced climate change is not only an environmental phenomenon, but also one of the main security challenges of the 21st century. Although pathways vary from place to place, it is clear to communities on the front line that climate change is already worsening violent conflict, and at a time when they are more numerous and longer lasting than ever.^{xxxviii} These developments undermine social cohesion and social contracts, thereby threatening the stability of countries and entire regions.

Conflict, in turn, drives the socioeconomic vulnerability and environmental degradation that worsens exposure to climate change and opportunities to mainstream climate into peacebuilding are missed, not least because of persistent underfunding of peacebuilding programming despite rising global levels of conflict.¹³ All in all, climate and conflict are creating a wicked feedback loop for the most vulnerable children and families.

As the findings of this research make clear, climate action must be conflict sensitive, while conflict prevention and peacebuilding approaches must be climate sensitive.

As a matter of urgency, World Vision recommends that:

Governments, donors, and/or the international community must:

- **urgently follow through on the establishment and financing of a loss and damage fund**, as called for by the IASC and humanitarian, climate and development organisations,^{xxxix} to provide lower-income countries with the means to cope with the effects of climate change – including increased conflict
- in tandem, **increase humanitarian funding to address the burgeoning hunger crisis** without pulling funding from loss and damage, or vice versa. Particularly in fragile contexts and protracted crises, ensure humanitarian action works across the triple nexus, mainstreaming work on climate-linked root causes of fragility and integrating peacebuilding
- **support mechanisms to ensure that communities are able to engage in climate change adaptation and mitigation policy development** so they can govern and interact with climate change issues (e.g. mining, water, education, building regulations)
- **commit to long term project cycles and multi-year funding.**

¹² A legally binding international treaty on climate change adopted by 196 Parties in Paris, France in December 2015. For more background, see: UN Climate Change (UNCC) (n.d.) ‘[The Paris Agreement](#)’, [Accessed as of 27/10/2023].

¹³ e.g. in 2023, the Institute for Economics and Peace’s annual Global Peace Index marked a decline in average level of global peacefulness for the ninth consecutive year, and in 12 out of the last 15 years. <https://www.visionofhumanity.org/maps/#/>

Farmer-managed natural regeneration (FMNR) as a force for peace

About 40% of land is degraded worldwide, according to the United Nations,^{xl} and about 12 million hectares of productive land – an area roughly the size of Greece – is degraded every year.^{xli} Degraded land is both a cause and a consequence of climate change. Land degradation is caused mainly by human activities, including negative coping strategies such as intensive farming, selling charcoal to replace lost income, or land clearance for mining. Degradation then causes biodiversity loss and feeds back into climate change in a negative feedback loop – changing temperatures and rainfall patterns increase stress on ecosystems, and degraded landscapes are less able to sequester carbon.

The World Resources Institute estimates 2 billion hectares of this degraded land has the potential to be restored,^{xlii} offering huge potential to sequester carbon at scale. The Glasgow Leaders Declaration on Forests and Land Use, adopted by more than 100 governments at COP26,^{xliii} reaffirmed the importance of ‘conserving forests’ and ‘accelerating their restoration’.

Farmer Managed Natural Regeneration (FMNR) is a game-changing, low-cost nature-based solution that has the potential to be scaled globally to support climate change mitigation, adaptation, and the SDGs. It is an evidence-based approach applied in over 29 countries that uses simple tree-pruning techniques to achieve rapid re-greening of degraded landscapes.

FMNR has multiple climate and environmental benefits, including increasing carbon sequestration and biodiversity and reducing localised soil and air temperature, land and soil erosion reduction, and disaster risk. Based on evaluations of FMNR implementation in 10 countries in East and West Africa, implementing FMNR in conjunction with improved livestock and agricultural practices can reduce the number of people living in poverty in drought-affected areas by 50% by 2030.^{xliv}

Critically, FMNR is a community-led approach to restoration and resource management – which means it is also a powerful tool to prevent natural resource conflict. Communities don’t just restore their local environment, but also revive traditional or formal local resource governance systems. Hot spots for resource conflict are mapped and prioritised for restoration; competing groups jointly develop fair bylaws and enforcement mechanisms for use of communal resources. In high-conflict and fragile contexts, local peace actors and environmental actors join forces to decelerate violent conflicts as they occur. This joined-up approach produces deep impacts not only in environmental restoration, but also in local peace. Previous studies in Niger have also shown conflict between herders and farmers reduced by 70% as resource availability (e.g. fodder, food, fuel, water) expanded.^{xlv}



“Short project cycles are insufficient to create momentum on major adaptation requirements.” – Climate change expert, Guatemala

International NGOs, civil society and implementing agencies must:

- **Build organisational capacity to ensure climate mitigation/adaptation programming is conflict sensitive:**
 - revisit climate mitigation and adaptation approaches/project models, considering these in light of conflict risks
 - invest in capacity to assess contextual conflict drivers and use this knowledge to inform design and implementation
 - build conflict sensitivity and conflict management capacity in climate project teams, particularly in frontline staff, and strengthen familiarity with climate-conflict linkages across the organisation, including senior decision makers.
- **Directly tackle the intersection of climate and conflict where it is actually occurring:**
 - **deliberately target locations of highest need, particularly those experiencing or at high risk of conflict** (e.g. high numbers of internally displaced persons), while taking appropriate risk management steps
 - **build climate-resilient livelihoods and transform food systems through regenerative and climate-resilient agriculture** practices, supporting both climate change mitigation and adaptation goals, with significant benefits for those most affected by climate change and environmental degradation, in particular children

- **work with communities, formal and informal local governance to strengthen fair and sustainable local natural resource management**, with particular emphasis on building options for transparent, nonviolent dispute resolution
- **build local capacities for peace**, empowering local actors to address underlying grievances over time, as well as to manage episodes of conflict as they arise
- **accelerate the delivery of life-saving assistance** in areas where families are most affected by the negative impacts of climate change, preventing adoption of environmentally harmful negative coping strategies.

Formal processes of conflict resolution, whether at the local, regional, or national levels, through courts or negotiated settlements, provide a captive audience for extending the conversations to address core issues around the environment and climate change. Concrete initiatives in environmental peacebuilding have proved effective in Burkina Faso, but the organisation, guidance, best practices, and strategies for engaging in environmental peacebuilding are sporadic. They must address and consider the trade-offs and long-term trajectory that climate change risks and impacts might have on conflicts. Peace mediators at the heart of conflict resolution should extend the narrative of conflict resolution to one which reinforces the importance of the environment and makes dialogues more climate sensitive.

Faith leaders as peacebuilders

Faith leaders and communities are often on the front lines of locally-led responses to the nexus of hunger, nutrition, conflict and climate crises. In World Vision’s programming, faith communities are essential partners in identifying and supporting vulnerable families and communities, promoting community-based and people centred responses and promoting values rooted in faith that promote protection of both people and the planet.

Respondents in Grand Katanga and the Dry Corridor highlighted the role of churches and/or mosques in leading or supporting adaptation initiatives. Local churches and faith communities are leaders in promoting values and people-centred responses to climate change.

“*The Catholic Church has been working a lot on the awareness that we take care of ‘Our common home’, which is the earth; that is, we take care of where we were born, we do not leave, we are more resilient with innovation, with creativity we can improve with you, we can improve the quality of life; that or the Catholic Church is working a lot.*” – Climate change specialist, Dry Corridor

World Vision’s formal ‘Do No Harm’ programme for faith leaders,^{xvi} as well as intentional work to convene interfaith networks for children, strengthen social cohesion and promote joint efforts to ensure communities are working for children.

With such a wide access to communities, faith leaders often serve as catalytic entry points for

change within communities. Faith leaders were also named as one of the most active parties in dispute resolution in respondents’ communities and the second most trusted persons to help resolve conflicts (see Figure 16). As such, faith leaders can be key partners in efforts to prevent climate-linked conflict.

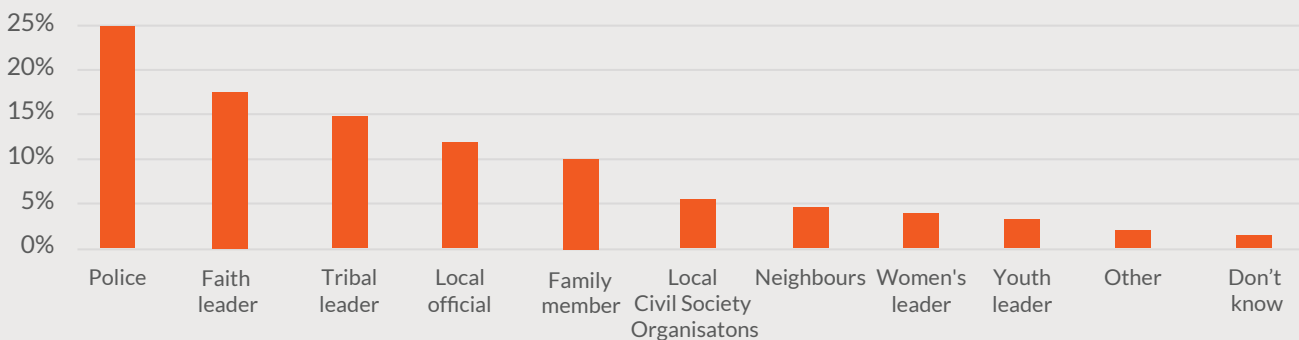
“*Only the church has activities to address conflict resolution, prevention or management.*” – Focal group participant, Grand Katanga

Globally and in local communities, faith leaders and communities are supporting farmers, families and communities to respond to the impacts of climate change by leveraging climate-resilient agriculture that provides livelihoods while also improving biodiversity, promoting reforestation and addressing hunger and nutrition.

“*Efforts [were] made by some NGOs, organisations, some churches and ADESCOS [a community development organisation promoting development at the community level] for the reforestation of some areas and [taking] care of some protected areas, which help to minimise in some way the climate change [impacts].*” – Faith leader, Dry Corridor

World Vision has historically partnered with more than 500,000 faith leaders globally from diverse traditions in more than 50 countries to address key issues impacting child well-being.

Figure 16. Community members trusted by respondents to help resolve local disputes



ANNEXE 1: EXTENDED METHODOLOGY

Data collection

This research used a mixed methods design, with qualitative information from KIIs and FGDs, combined with a quantitative household survey in each location.

KIIs generated qualitative data on perceptions of the challenges and opportunities associated with climate change and conflict. Target respondents for KIIs were strategically placed to speak on issues relating to climate change and conflict. During Phase I, approximately three to five initial KIIs were conducted in each of the six contexts. This information was then used to finalise the design of the Phase II data collection tools. A further five to seven KIIs were conducted in the second phase of data collection.

FGDs enabled nuanced discussion of the key issues at play in terms of understanding climate change and conflict interactions. At least four FGDs were conducted across each case study – one with local leaders (tribal, faith, young people, women, etc.), one with civil society (with a specific focus on those engaging on climate and conflict issues), one with local government (targeting officials in ministries and departments focused on climate change and conflict), and one with local business leaders. The FGD sample aimed to include participants from urban and rural areas to provide a deeper understanding of differences between contexts. Each FGD included approximately six to eight participants with a refusal rate of 30% factored in, and participants were identified by World Vision staff in each country.

Each location conducted a household survey with a target of 300 respondents. Respondents were selected using stratified random sampling with the aim of achieving a 50% response rate from women. Strata were agreed upon during the draft data collection tool development phase (see research process).

Research process

Phase I – The initial data collection took place in July 2023 with KIIs held with 35 respondents to ascertain the most relevant climate change issues and conflict dynamics in each area. These findings then fed into the revision and finalisation of KII and FGD question sets and the survey tool, in collaboration with World Vision staff.

Phase II – Once the data collection tools were finalised, 50 additional KIIs were completed, along with 57 FGDs during August and September 2023. Qualitative data was coded and entered into a master tracking sheet. At the same time, enumerators surveyed 2,716 people as part of the household survey. Data entry by the enumerators occurred simultaneously with data collection as World Vision field staff used the Kobo system to enter quantitative data for validation. Notes and recordings from KIIs and FGDs were also uploaded frequently to enable translation to take place concurrently.

Limitations

Courtesy bias: While partly cultural, this type of bias – which entails respondents providing answers they deem socially desirable – is common when international organisations conduct face-to-face interviews. However, this tendency typically appeared only at the start of the interview; within 10 minutes, respondents seemed more open with their honest opinions and sharing of personal and professional experiences.

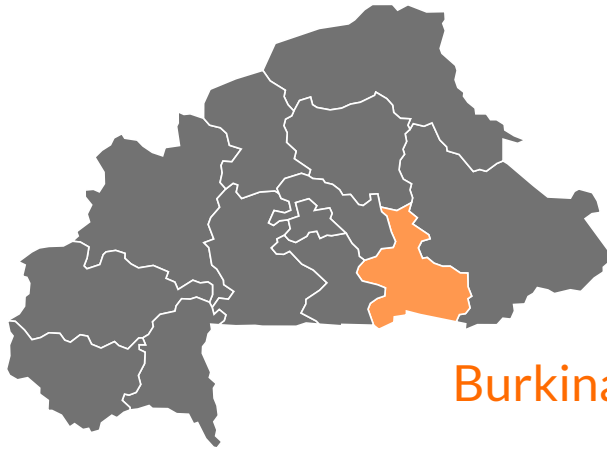
Selection bias: It was challenging for the World Vision teams to access conflict and climate change specialists in most contexts, and they tended to defer to those experts that they were more familiar with, based on local programmes, instead, engaging other topical experts or those

in position of authority who they thought might be able to speak to conflict or climate change dynamics without being experts in the field. This meant that, in some contexts, there was a high number of agricultural experts interviewed, and occasionally the understanding of conflict dynamics was basic. In some contexts, political sensitivities also made it difficult to discuss conflict directly, and so the term 'social cohesion' was used in some versions of the questionnaire.

Representation: The World Vision team was gender and sector balanced (with knowledge of food security, democracy and governance, and education) across the contexts. They were also local to each context, and therefore familiar with the dynamics more broadly. However, the team lacked direct expertise in climate change and conflict, which inhibited the amount of probing on these subjects.

Site selections: The World Vision team selected areas based on their experience, identifying areas where climate change and conflict could be said to intersect. However, there are multiple other cases studies within each context that could be deemed appropriate, but this study was limited in time and scope.

Data collection: Data gathering was remotely supervised and guided by the research consultants. World Vision's field teams were experienced quantitative data researchers, but, in some cases, had limited experience in qualitative field data collection. As a result, the level of probing for question sets was limited, and, in certain cases, limited the depth of understanding the connection between conflict and climate change. This gap has been supplemented by the research consultants' own contextual understanding of the geographical locations and desk reviews, where possible.



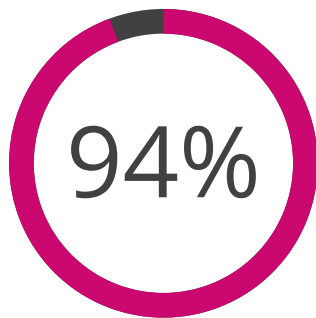
Drought, displacement and the weakening of social cohesion

Burkina Faso: Centre-Est region

Burkina Faso is currently ranked 153 out of 163 countries in its progress towards the Sustainable Development Goals. According to ND-GAIN it ranks 157 out of 185 countries, a measure of its exposure, capacity to adapt and sensitivity to climate change.

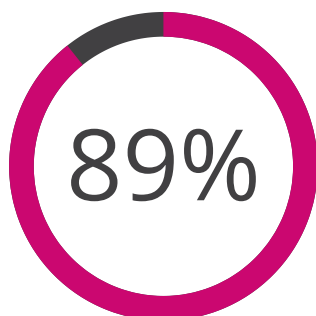
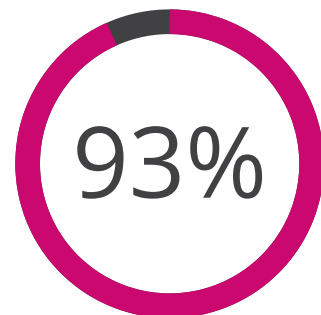
A recent UN report highlighted that if unaddressed the impacts of floods, droughts and heatwaves will continue to jeopardise citizens' access to water, food and livelihoods and elevate the risk of displacement.

This study has found that climate change is a serious issue in Centre-Est, and contributing to displacement and weakening social cohesion.



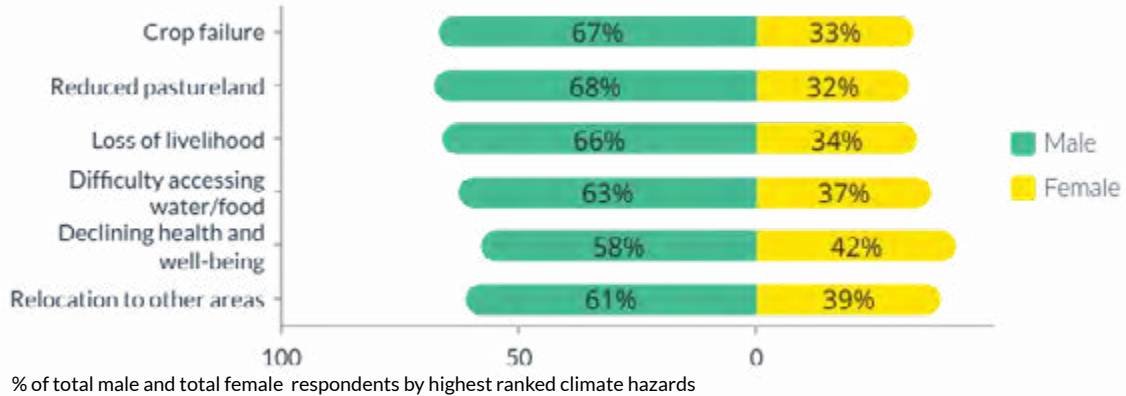
of respondents agreed that climate change is a serious issue in their community

The highest ranked concern was changing rainfall patterns in their area (and 82% were concerned about floods)



of respondents were concerned about drought in their area

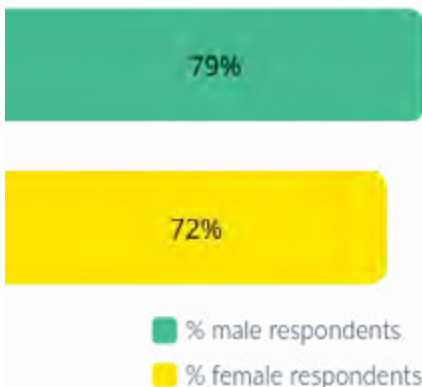
How do climate hazards negatively impact communities (highest ranked by male and female respondents)?



Of total respondents (78% of all men, 59% of all women) said that farmers are the group most affected by climate hazards in their community

Female respondents considered that herders were the group most affected by climate hazards in their community (60% of all women interviewed)

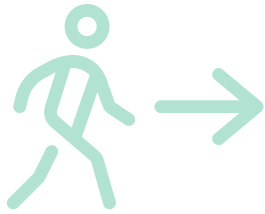
Respondents put **deforestation** as the most common negative coping strategy when asked how they thought climate change has changed land use in their communities



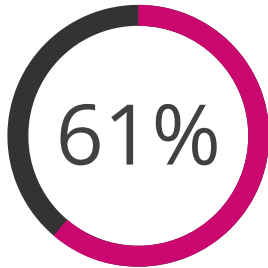
"Climate change is causing deforestation and the displacement of populations. The small forest resources that are there are no longer sufficient, so for lack of land, people are forced to cut down trees to make way for fields."
- Civil Society Representative

98% of all respondents agreed that climate change increases the risk of hunger and food insecurity



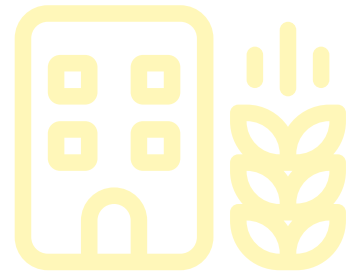


"The population is moving from the arid Sahel, Central North and North [of the country] towards these areas. And when you say population shift, you say high pressure on land, high pressure on forests, high pressure on water resources, and all this is not without tension." - Agriculture Specialist

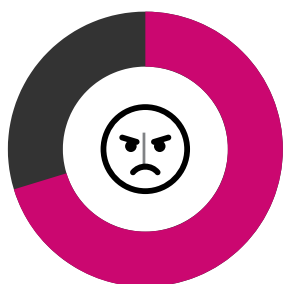


61% of respondents agreed that climate change leads to displacement to their community

"As far as peace is concerned, there are a lot of IDPs here and there are difficulties accessing food because the population has increased." Community Leader

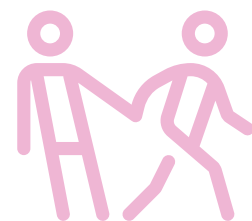


Disputes over land were the highest ranked cause of conflict amongst respondents aged 18 - 49



70% of respondents (48% male, 22% female) agreed that climate change causes divisions in their community

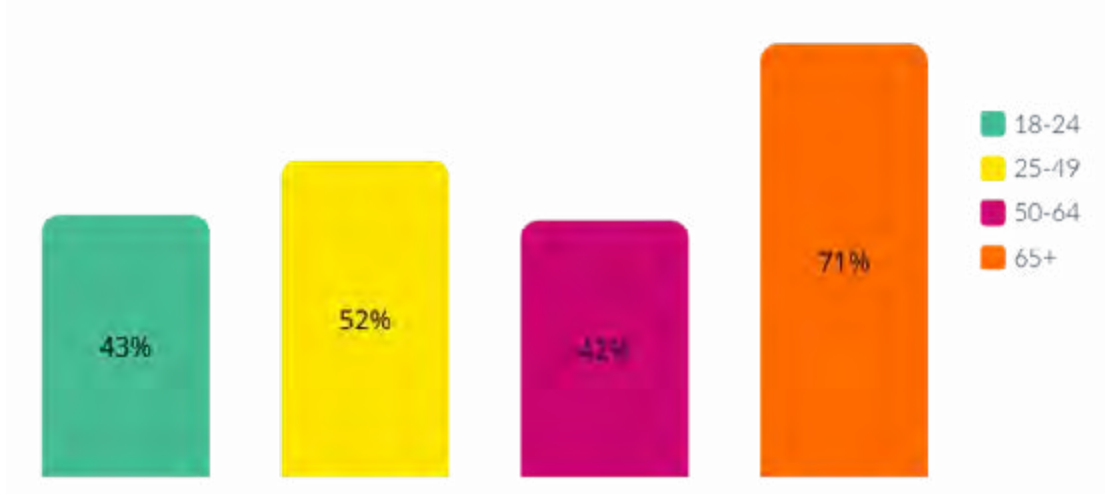
"The cause of these conflicts is intimately linked to climate change...People are moving from one area to another in search of well-being or in search of areas to exploit. It goes without saying that while there is a wave of displacement, the land is not increasing. So, there will be conflicts over land use." - Climate Change Specialist





The "**weakening of social cohesion**" was ranked as the most frequent impact of conflict on people's lives (**49%**). Although this varied significantly according to age group.

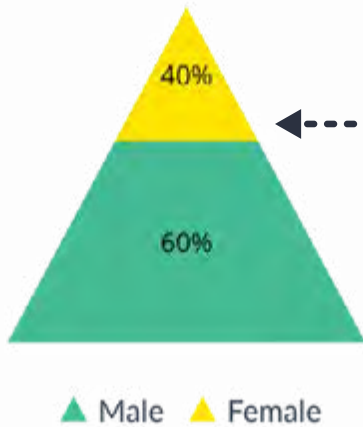
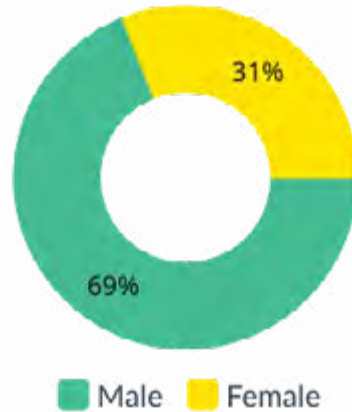
% of total respondents who said that a result of conflict which impacts their daily lives is weakening social cohesion



"Social cohesion is affected. Imagine in the village...for a problem of fields you confront each other...If you have a green space or a classified forest, people are going to come in and turn it into fields. It creates problems for the villagers."
- Civil Society Representative

61%

of respondents agree that the impacts of climate change worsen existing conflict in their communities

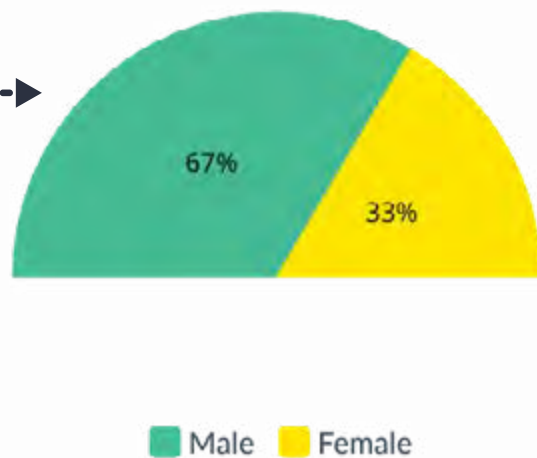


71%

of respondents agree that if the negative impacts of climate change increase, conflict will also increase

70%

of respondents agree that if the negative impacts of climate change reduce, conflict in their communities will also reduce

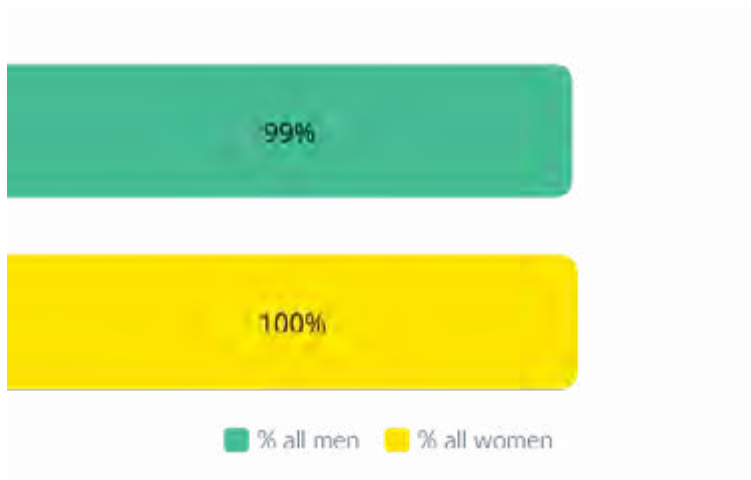
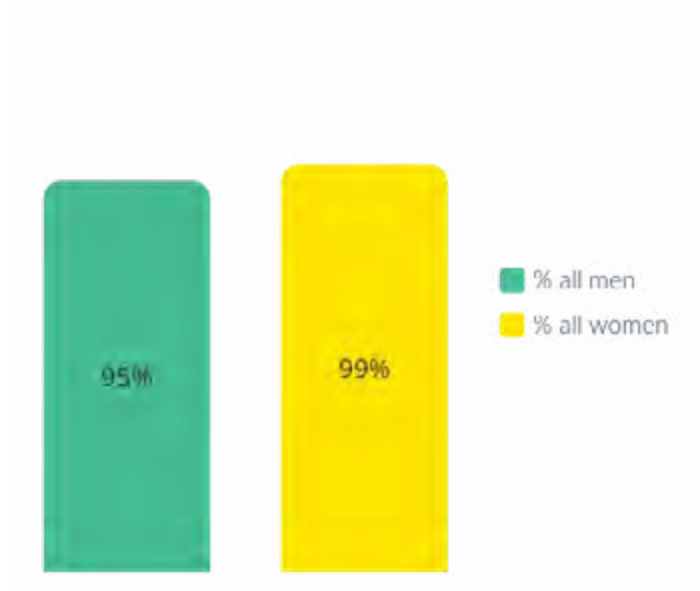


When asked how the actions that communities take to cope with climate change could be an obstacle to peace, the highest ranked responses by all respondents were **"poor consultation"** and **"lack of information"**.

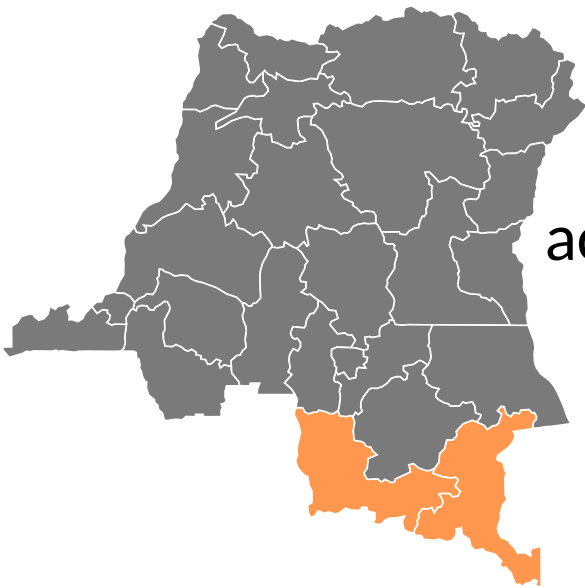


"What is crucial for me is raising awareness, providing information, training and involving communities in the design and implementation of projects and programmes...in actions to mitigate and adapt to climate change."
- Agriculture Specialist

The vast majority of respondents agreed that climate change must be addressed as a priority by all stakeholders to reduce conflict.



the vast majority of respondents (all female respondents) agreed that we all have a role to play in addressing climate change and conflict.



Industrial anthropic activity, environmental degradation and fragility

Democratic Republic of the Congo: Lualaba and Haut Katanga Provinces

DRC currently rates 157 out of 163 countries in its progress towards the Sustainable Development Goals. According to ND-GAIN, it ranks 169 out of 185 most vulnerable countries in the world to climate change.

Water access and food security remain major challenges, and the potential for productive agriculture is limited with infrastructure decline, rural migration and poor legislation. Added to the complexity of the context is a historical perspective of colonial policies, complex conflict dynamics that persist despite the peace agreement in 2002, and elitist politics and their associated power relations that continue to undermine state legitimacy and capacity.

The area of Grand Katanga (including Lualaba, Lubumbashi and Likasi) holds important sources of natural resource wealth, biodiversity and carbon sequestration and yet is also home to conflict, gender divides, human rights abuses, natural disasters and human-environmental interactions detrimental to natural forests.

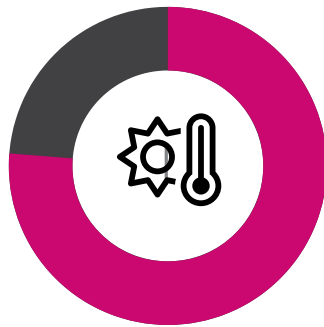
Highest ranked climate hazards (% of all respondents)

71%

Drought

41%

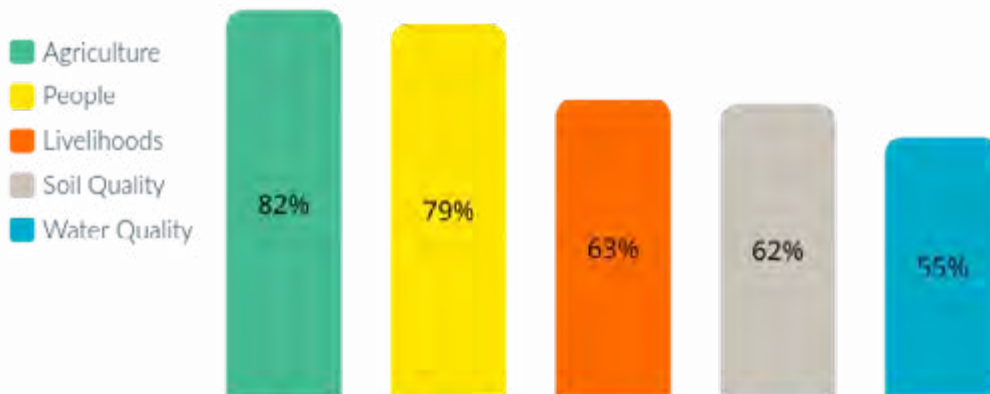
Rainfall
patterns



76%

of respondents strongly agree that climate change is a serious issue for people in their area

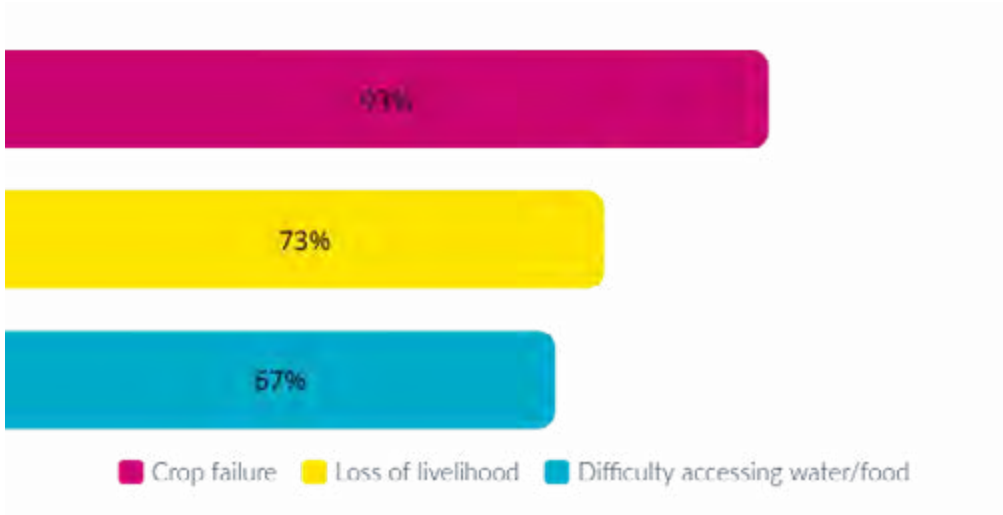
Who or what is most exposed to climate hazards in your area?*



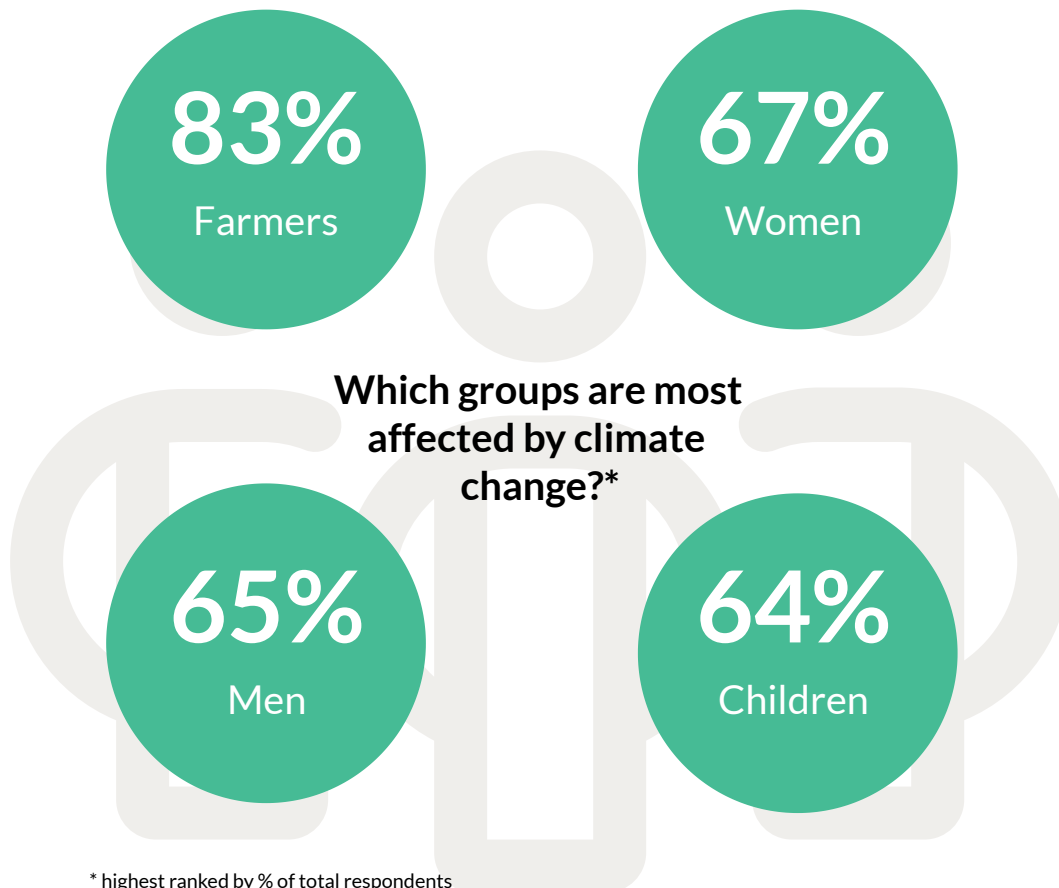
*highest ranked by % of total respondents

"The population (especially children)...[are affected by climate change]. Farms occupy a large part of the land by deforesting the trees. The animals are dying, especially the chickens, because of the heat. Material goods [are affected] due to strong winds. Land [is affected by] soil fertility which is not of quality. Water and farming fields [are] affected by climate change. Children suffer all year round because of the heat. Trees are cut down and cause difficulty breathing. Deforestation reduces rain, water and heat causes illness."
- Community Member, Focus Group Discussions

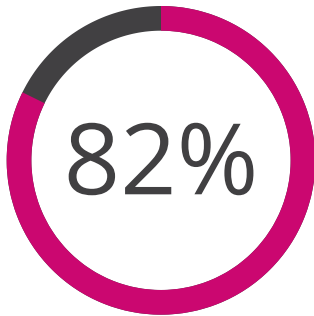
How do climate hazards negatively impact your life?*



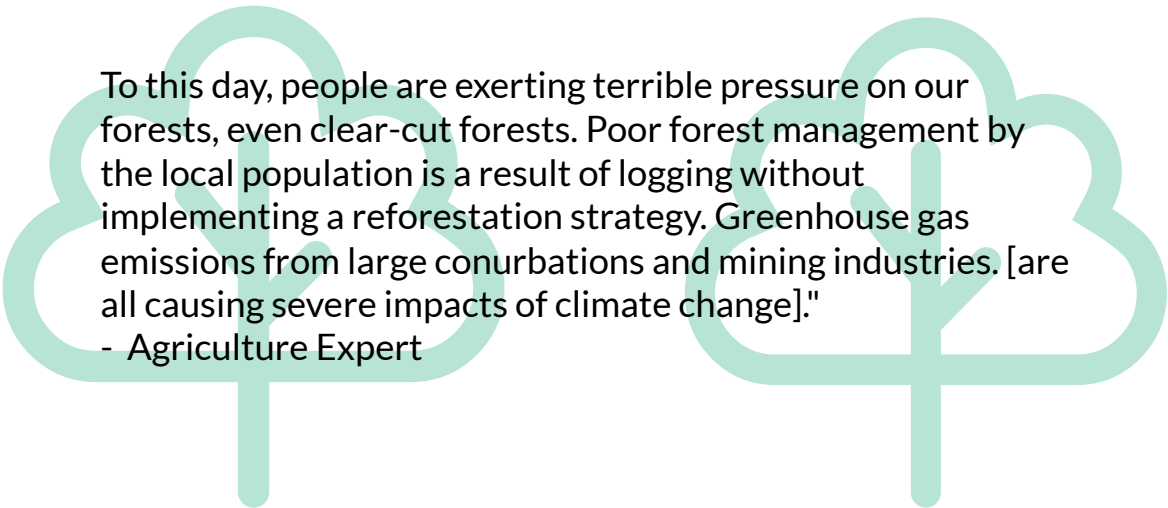
* highest ranked by % of total respondents



* highest ranked by % of total respondents



respondents put **deforestation** as a negative coping strategy to climate related shocks and stresses



To this day, people are exerting terrible pressure on our forests, even clear-cut forests. Poor forest management by the local population is a result of logging without implementing a reforestation strategy. Greenhouse gas emissions from large conurbations and mining industries. [are all causing severe impacts of climate change]."

- Agriculture Expert

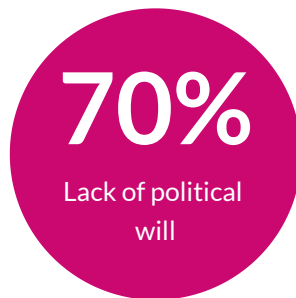
What actions are your communities taking to overcome climate change challenges?

43% of respondents said they were overcoming challenges through alternative livelihoods, mainly mining. However, 44% of respondents indicated "other" and stated in their responses that they were not doing anything to overcome challenges. Only 34% said they had diversified agricultural practices.

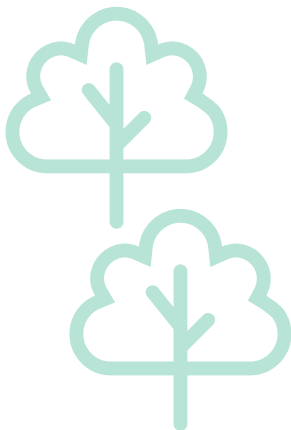


* highest ranked by % of total respondents

What is preventing communities overcoming the challenges brought about by climate change?*

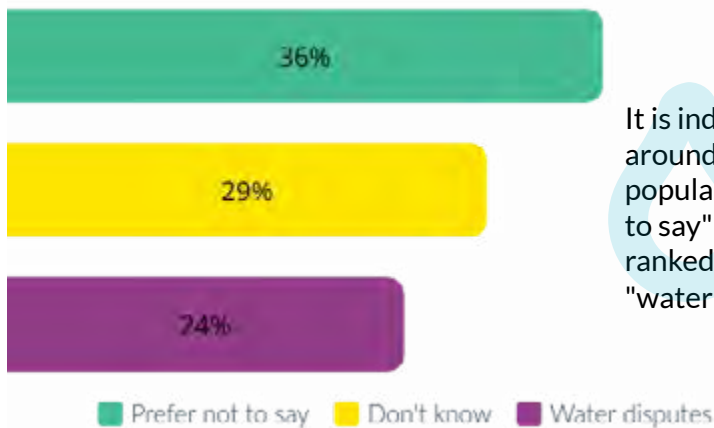


* highest ranked by % of total respondents

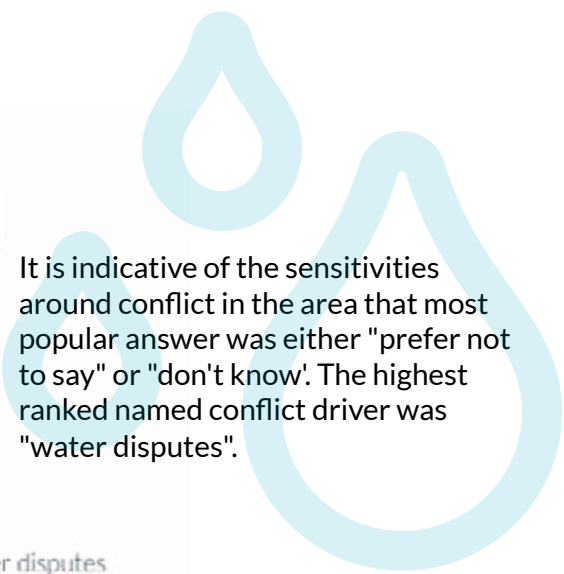


"[There are] no activities that help communities adapt to impacts of climate change and only limited activities to mitigate – include reforestation. [We adopt] alternative livelihood opportunities to create economic security and growth and take refuge in quarries and the mining industry"
- Conflict Specialist

Highest ranked conflict drivers



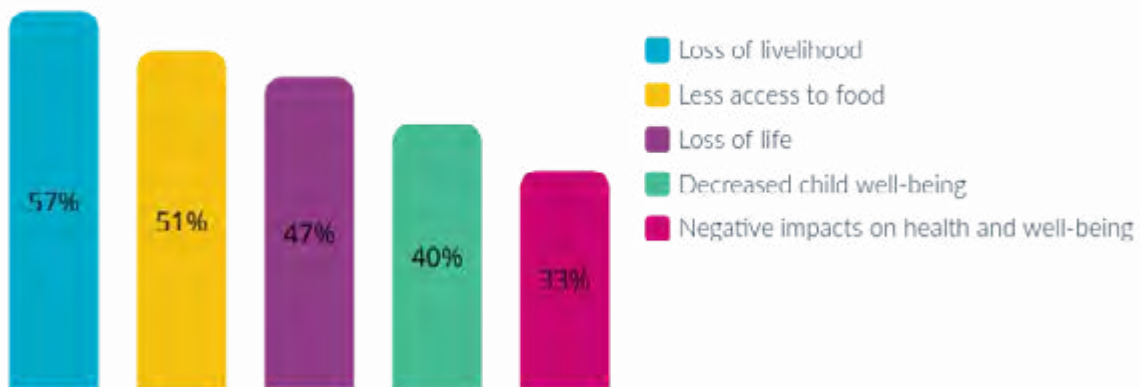
It is indicative of the sensitivities around conflict in the area that most popular answer was either "prefer not to say" or "don't know". The highest ranked named conflict driver was "water disputes".



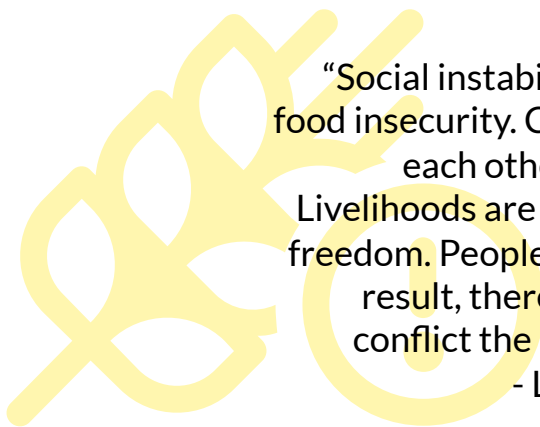


“[People are] looking for land and forest to cultivate. [But there is] a scarcity of land to cultivate for environmental reasons, or land [has been] purchased by large farmers or... politicians and private companies. Tribalism [allows the] manipulation of people by politicians. [People have] low access to drinking water: even streams and rivers are on private and private land, making [them] difficult to access.”
- Community Member

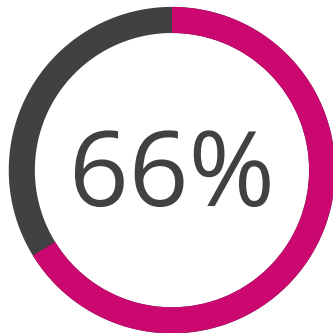
How does conflict impact your daily life?*



* highest ranked by % of total respondents



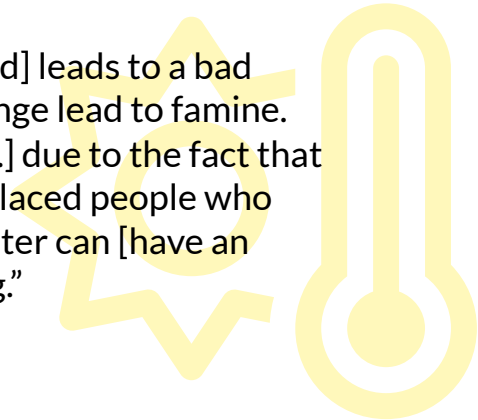
“Social instability, death by voluntary killing and food insecurity. Conflicts which [set] militia against each other and [an increase in] kidnapping. Livelihoods are impacted as there is a decrease of freedom. People [cannot] work properly [and] as a result, there is a weak production. [If there is] conflict the health centre does not work well.”
- Local Government Representative



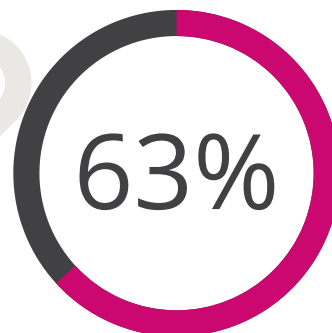
of respondents strongly agree that climate change must be addressed as a priority by all stakeholders to reduce conflict

“Conflict holds back development [and] leads to a bad climate. [...] Conflicts and climate change lead to famine. Conflict impacts on climate change [...] due to the fact that during conflicts there are always displaced people who [...] can initiate deforestation which later can [have an impact on] drought or global warming.”

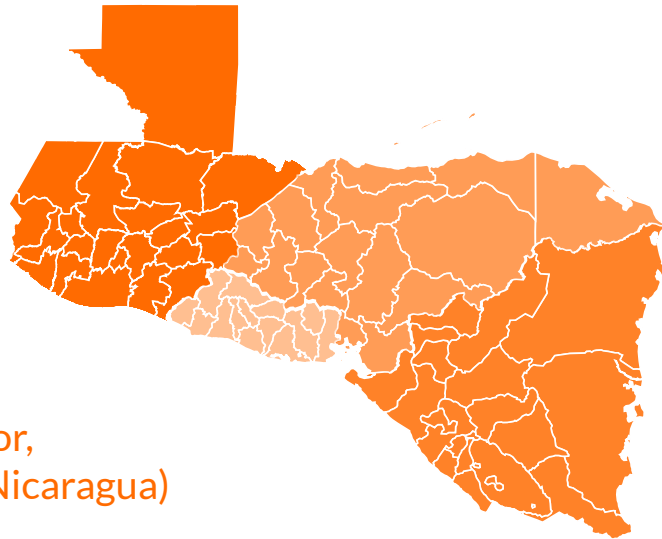
- Community Member



of respondents strongly agree that we all have a role to play in addressing climate change and conflict

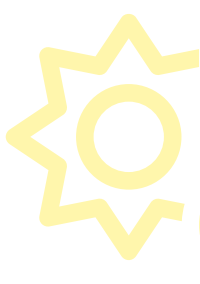


Erratic rainfall patterns, rural livelihoods, and water conflict



The Dry Corridor (El Salvador, Guatemala, Honduras, and Nicaragua)

The Dry Corridor is a dry forest area that runs through five countries in Latin America (Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua) that is subject to long periods of drought that seriously affect water availability, livelihoods, and food security. A 2022 study by the World Food Programme and CGIAR summarised that 'Guatemala, El Salvador, Honduras, and Nicaragua are affected by intermittent droughts, hurricanes, and the El Niño-southern oscillation phenomena. The region is also considered one of the most insecure in the world with high levels of violence and migration.' Quantitative and qualitative findings from this study further describe the effects of climate change in the region and draw links with the rise in water-related conflict.



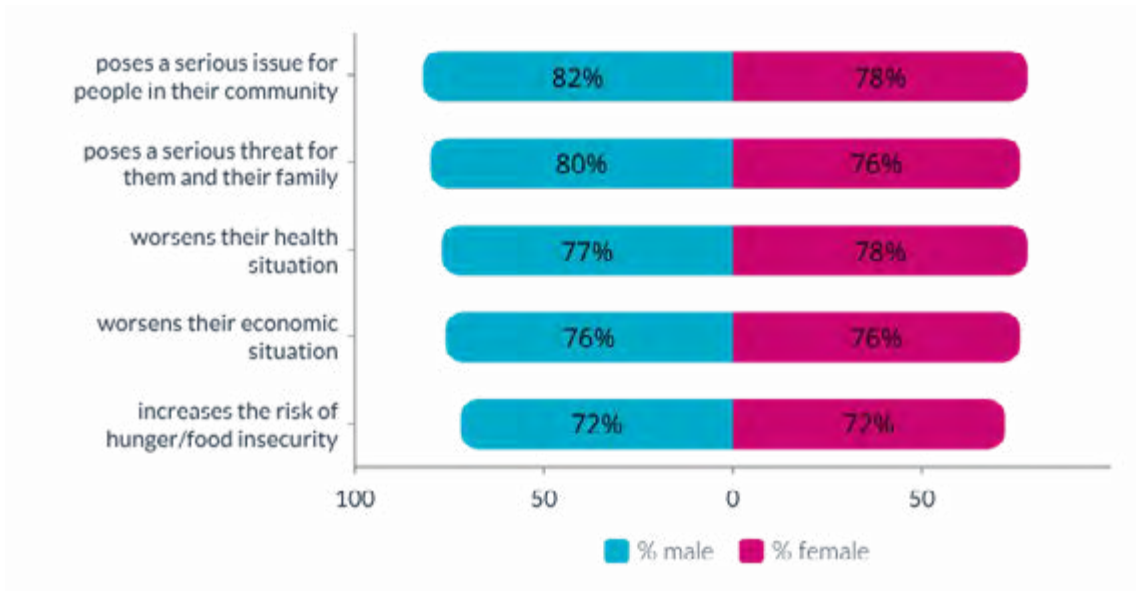
"Families in the community have experienced prolonged droughts where there is no rain for more than six months. At the beginning of the winter season, the rains are few and their duration is short; the soil does not allow the water to penetrate the earth. **The winter period is not defined, the seasons have changed.**" – Community Member

Highest ranked climate hazards



% of total respondents who said that that the above hazards were issues of concern in their communities.

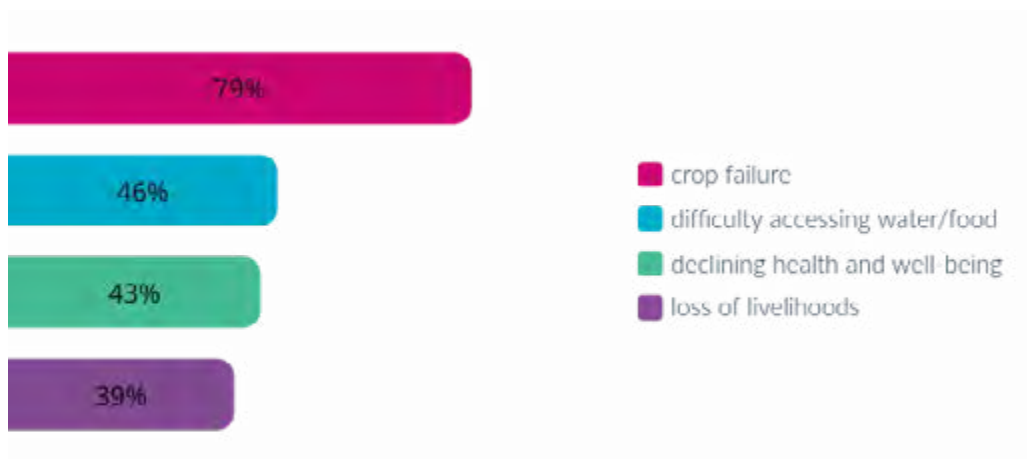
Respondents agreed that climate change . . .

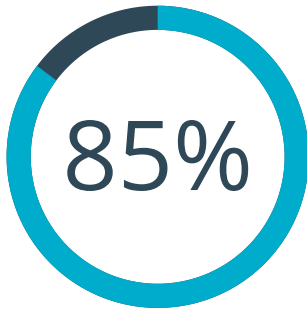


"The increasingly erratic patterns of rainfall cycles reduce the ability to maintain the flow of water sources in the face of a growing population. The increase in the demand for water and the reduction in flows affects the quantity and quality of water for human consumption and irrigation."

– Climate Change Specialist

How do climate hazards negatively affect communities?



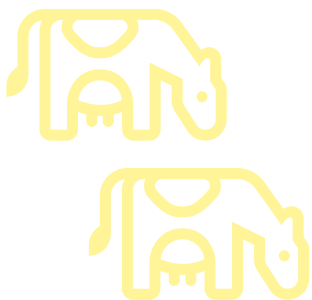


of all respondents said that they were concerned about the impact of climate hazards on the quality of water in their communities.

"Access to water in this area is one of the things that people complain about the most. They invest a lot of money [in] community wells [or] private wells. But, as there is a degradation of resources, they do not always find water . . . In addition, many [water sources] are contaminated by agrochemicals . . . Access to water . . . limits everything else, [like] family, agriculture production, opportunities for growth, and agricultural practices, that allow families to generate income."
– Civil Society Representative

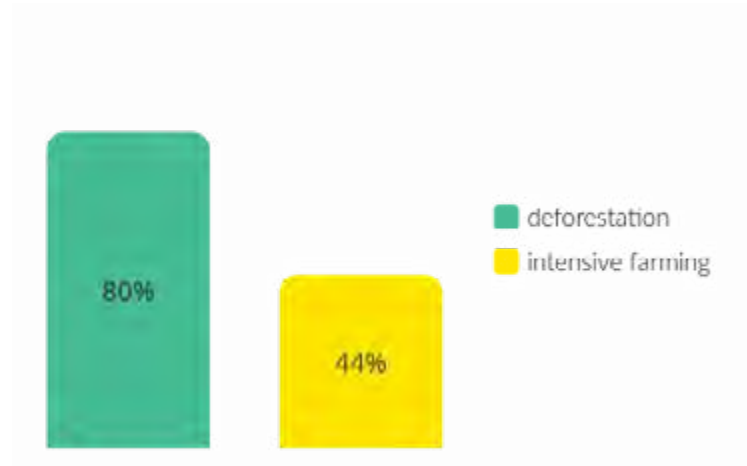


Water was the most commonly ranked cause of climate-related conflict



"The socioenvironmental conflicts are the main ones we have had [caused by] the reduction of water source flows, for example, because they are being used by other communities or large producers for livestock or irrigation."
– Climate Change Specialist

Deforestation and intensive farming were the most commonly selected coping strategies when asked how climate change has affected land use in communities.



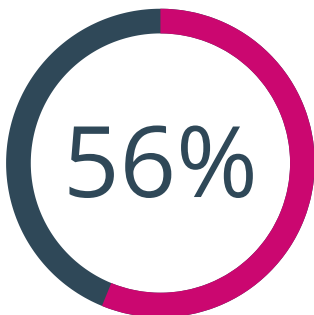
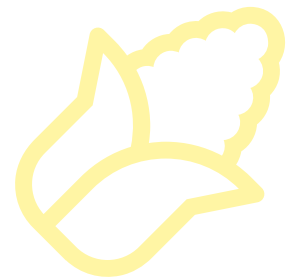
% of total respondents who selected 'change in land use' in response to how they respond to the effects of climate change



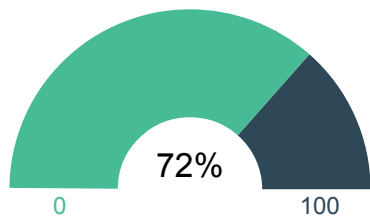
64%

of all respondents think that **farmers** are the group most affected by climate hazards in their community

"There have been conflicts due to a ... water deficit in the dry season [July and August]; crops of strategic importance [such as corn] for the rural population are affected. The flowering of the plants are affected; thus, reducing or losing the harvests of this important grain in the diet of the majority of the rural population." – Agriculture Specialist



of all respondents agreed that if the negative impacts of climate change increase, conflict in their area will also increase.

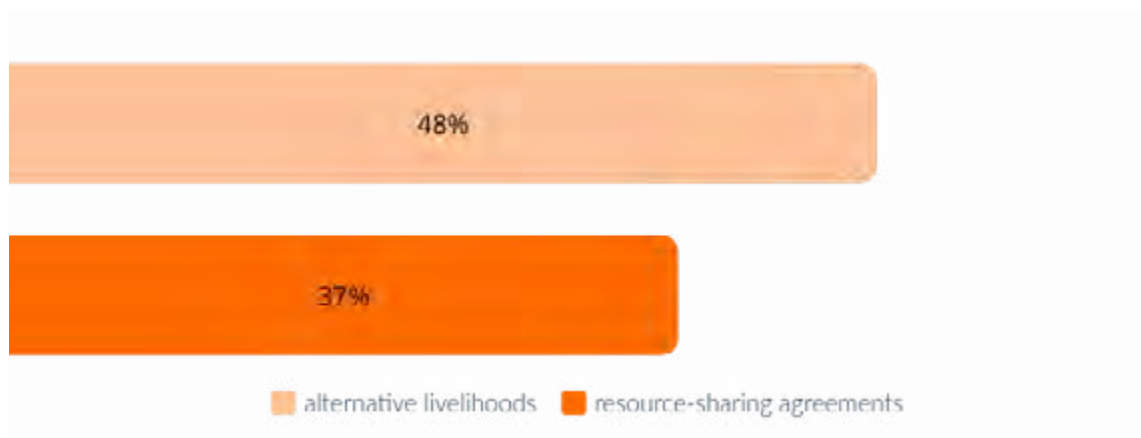


of all respondents agreed that climate change increases the risk of hunger/food insecurity



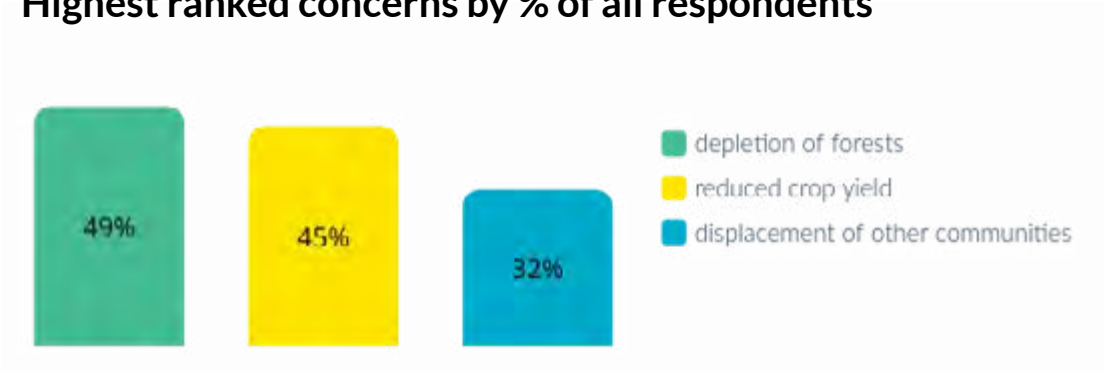
"There is a direct effect [of climate change] on the production of maize in the community, the harvests are reduced or lost due to the absence of rain. The decline and losses of crops leads to the rise in the prices . . . Another effect is the loss of jobs in agriculture; the low production or loss of crops discourages families from continuing to grow corn in the coming years [and] poverty increases." – Civil Society Representative

What actions are communities taking to overcome the challenges brought about by climate change?



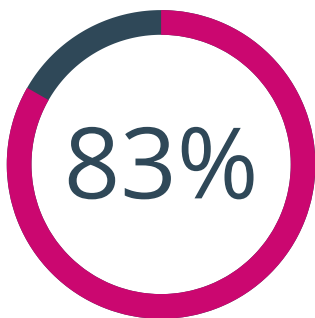
Communities said that they were concerned about the consequences of their actions to overcome climate change-related challenges.

Highest ranked concerns by % of all respondents

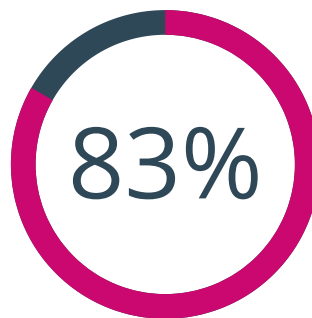


**Generally, male and female respondents had very similar levels of concern across all age groups. The biggest discrepancy was between men and women aged 50+ in relation to responses on 'reduced crop yield'. One-third of women (31%) aged 50+ thought that reduced crop yield was an issue of concern, compared to 48% of men in the same age group.

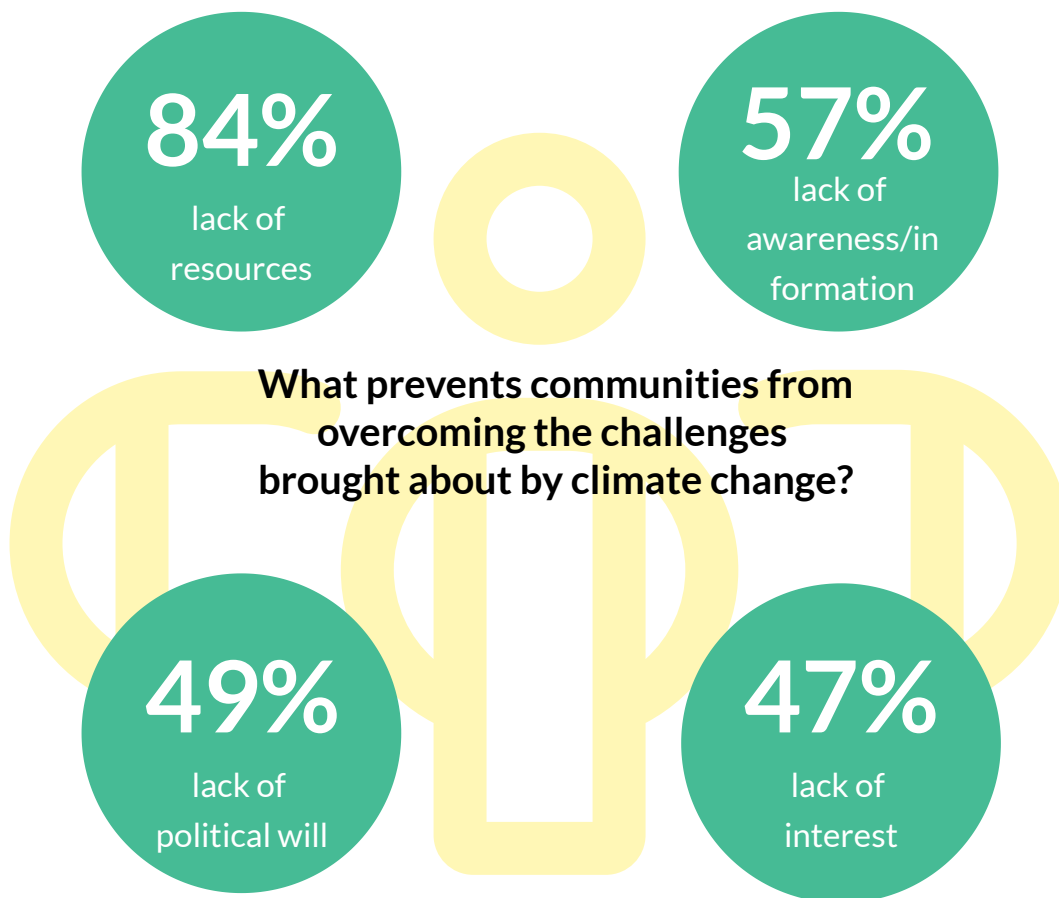
"One of the consequences [of climate change] is the occupation of wooded land for crops, generating deforestation, erosion, etc. In addition to the environmental consequences, the effects of climate change have been manifesting themselves . . . since agriculture does not represent, in many homes, a means of generating income and even generating food for family consumption. Faced with this problem, migration (national or international) has been one of the main options." – Agriculture Specialist



The vast majority of respondents agreed that climate change must be addressed as a priority by all stakeholders to reduce conflict.



The vast majority of respondents agreed that we all have a role to play in addressing climate change and conflict.

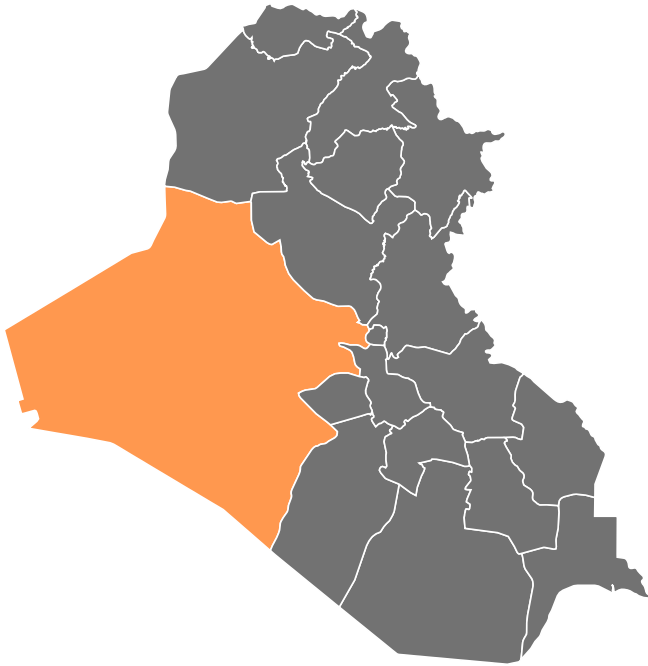


What prevents communities from overcoming the challenges brought about by climate change?



"One aspect is the lack of knowledge of the population, there is no awareness. Lack of technical support on these issues. Lack of economic resources to take coherent and structural measures. Lack of articulation of actors between productive development institutions and producers.

We need more support from the agencies, to expand [our understanding] more, [and] it is important that we move on from the talks to practice." – Civil Society Representative



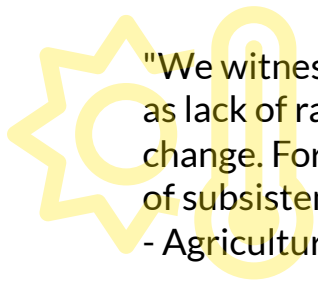
Drought, food insecurity, and resource conflict

Iraq: Al Anbar province

Iraq currently ranks 105 out of 163 countries in its progress towards the Sustainable Development Goals. According to the ND-GAIN index, it also ranks 105 out of 185 countries, a measure of its exposure, capacity to adapt and sensitivity to climate change.

Droughts, increased water stressors, sectarian violence and insecurity left in the wake of the rise and retreat of the Islamic State group are coupled with governance challenges, dilapidated infrastructure and economic instability to contribute to ongoing tensions.

According to IMF Climate Lab, Iraq is set to become the hottest country in the world by 2050. What's more, 80% of respondents in Anbar for this study agreed that climate change increased the risk of hunger and food insecurity.



"We witnessed major changes during the past [few] years, such as lack of rain and high temperatures, but the winds did not change. For our society that considers agriculture as a means of subsistence, drought can be considered a major disaster"
- Agriculture Specialist

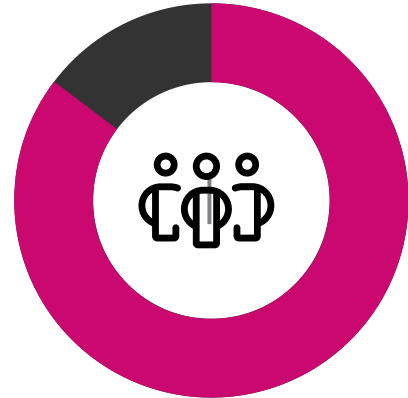
Highest ranked climate hazards



% total respondents who said that that the above hazards were issues of concern in their communities.

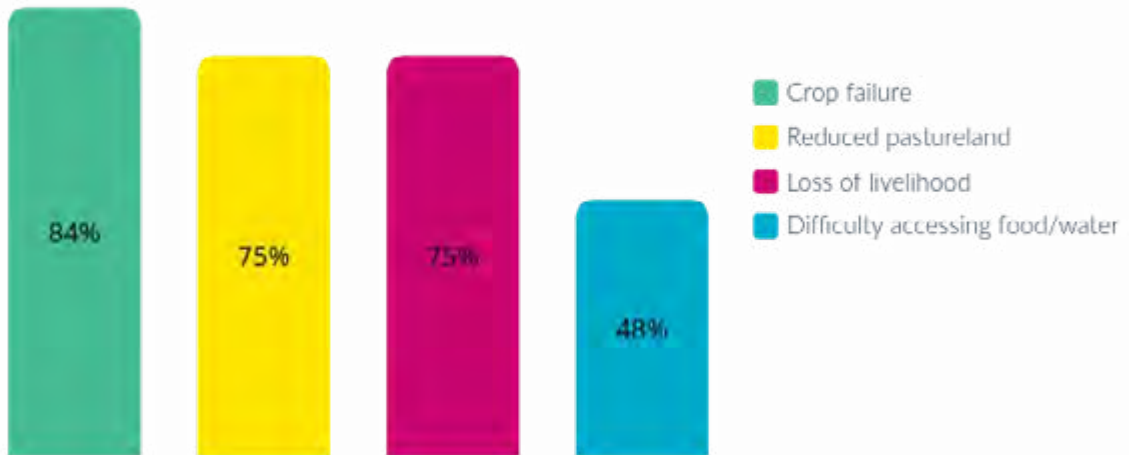
85%

of respondents ranked "people" of most concern when asked who/what is most exposed to climate hazards in their communities.



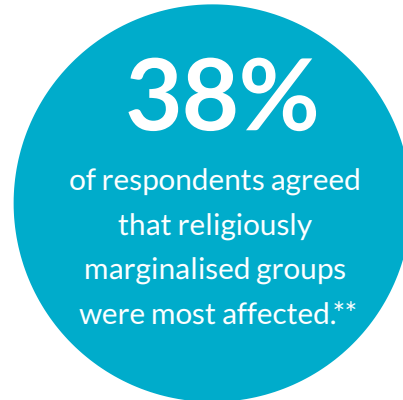
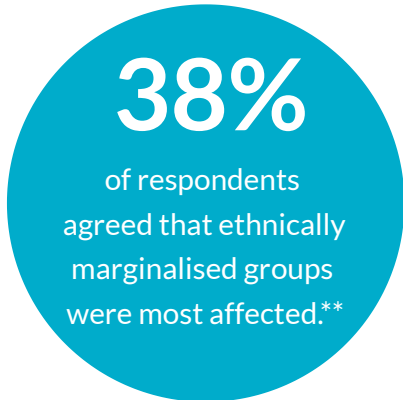
"Agriculture" was ranked second of most concern, by 78% people.

How do climate hazards negatively impact communities (highest ranked by % of total respondents)?



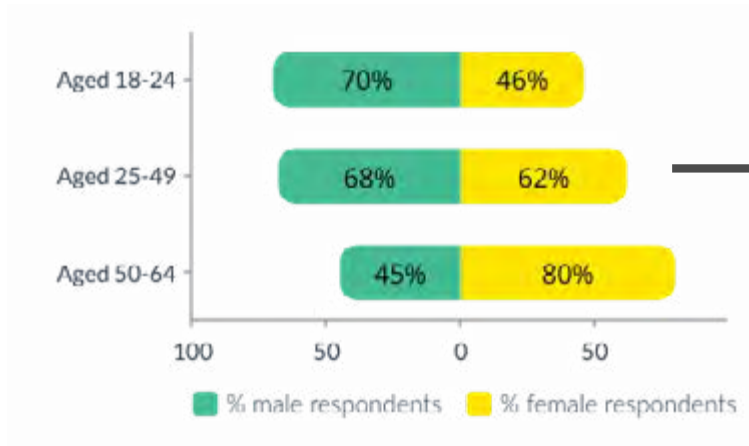
"A significant portion of the population [is] dependent on farming for their livelihoods. Climate change hazards such as droughts, floods, and extreme temperatures can severely impact crop yields, leading to food insecurity and economic losses for farmers. "
- Agriculture Specialist

When asked which groups are most affected by the impacts of climate hazards...



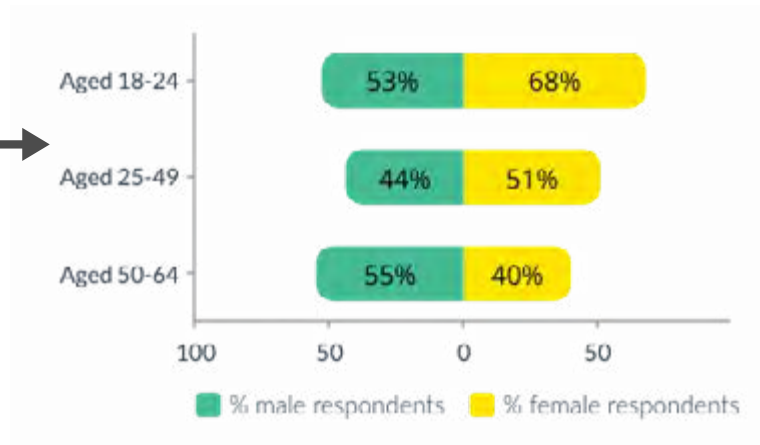
** These figures are notably larger than the global figures (24% and 21% respectively) which is perhaps indicative of how ethnic and religious minorities are viewed in Iraq.

Respondents ranked "intensive farming" and "transhumance" highest when asked how climate change has affected land use in their communities.

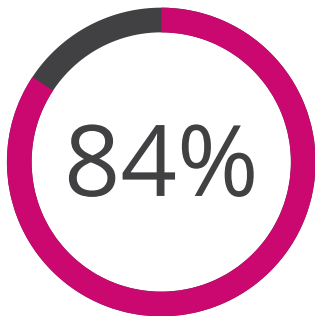
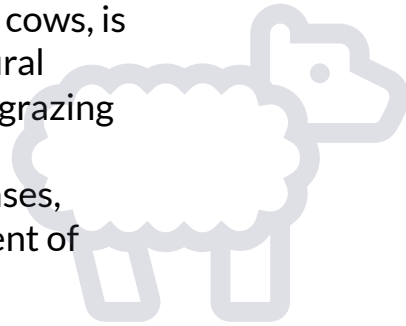


63%
of all respondents said intensive farming

51%
of all respondents said transhumance (seasonal migration for herds)

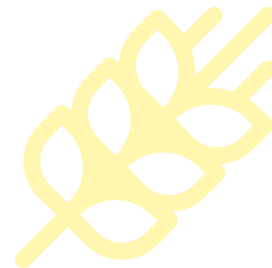


"Livestock rearing, including sheep, goats, and cows, is an integral part of the local economy and cultural heritage...Climate change hazards can disrupt grazing patterns, reduce available food and water for livestock, and increase the prevalence of diseases, leading to economic losses and the displacement of pastoral communities." - Local Government Representative

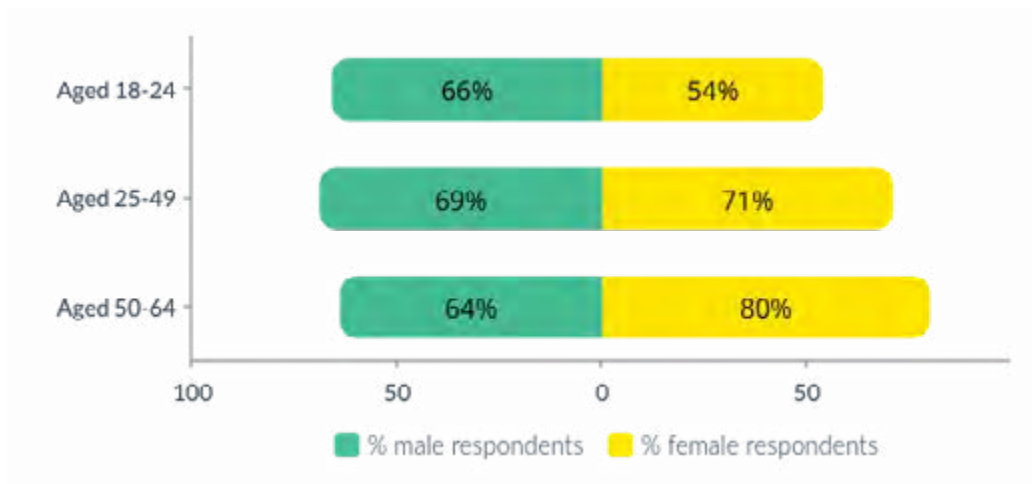


Of respondents reported that their community is engaging in alternative livelihoods to combat the impacts of climate change

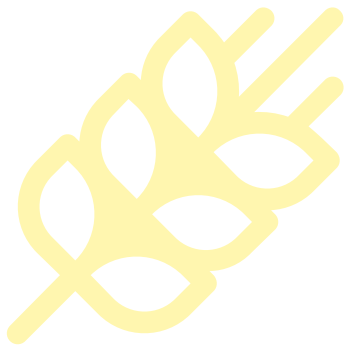
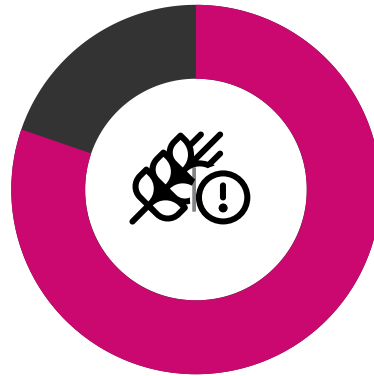
In spite of this, communities said that they were concerned about the consequences of their actions to overcome climate change-related challenges.



The concern ranked highest by respondents was "reduced crop yields" (67% of all respondents)

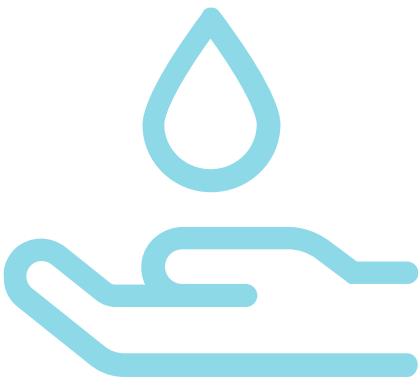
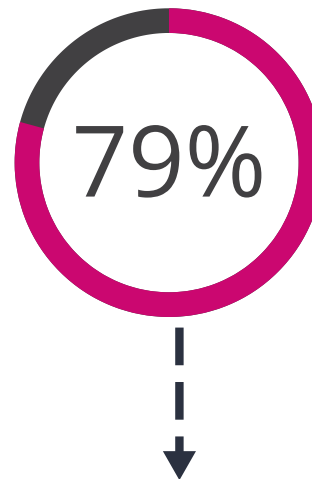


80%
Of respondents agree that climate change increases the risk of hunger and food insecurity



"Farmers and agricultural workers [rely] heavily on rain-fed agriculture [...]. Changes in rainfall patterns, increased water scarcity, and the risk of extreme weather events such as droughts and floods significantly affect their livelihoods. Crop failures and reduced agricultural productivity make them vulnerable to economic instability and food insecurity."
- Local Government Representative

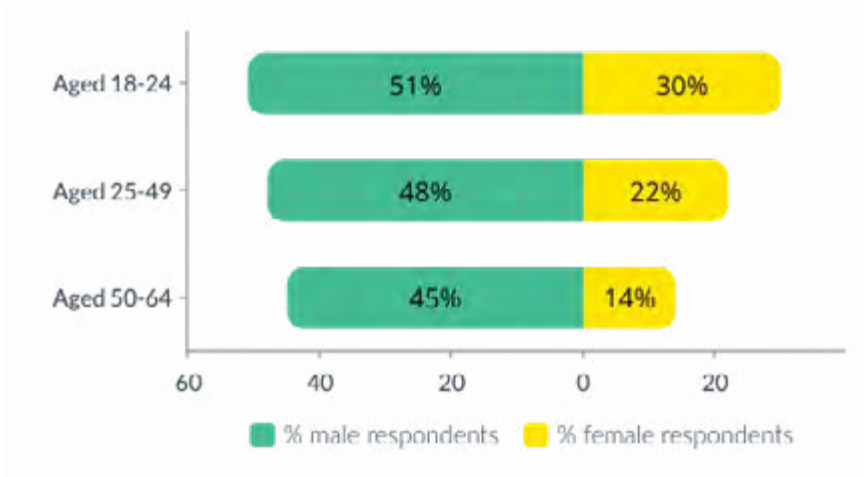
of all respondents agree that climate change is both causing and worsening conflict in their communities



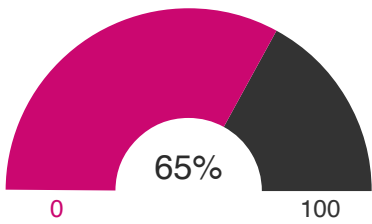
"Most conflicts occur on farmlands and the most common cause is water scarcity."
- Civil Society Representative

Respondents said that most conflicts in their communities are caused by land and water disputes

Conflicts are caused by land disputes

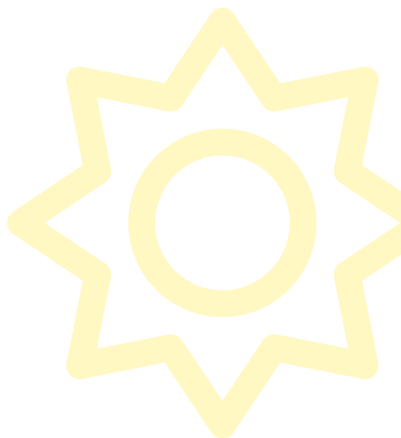
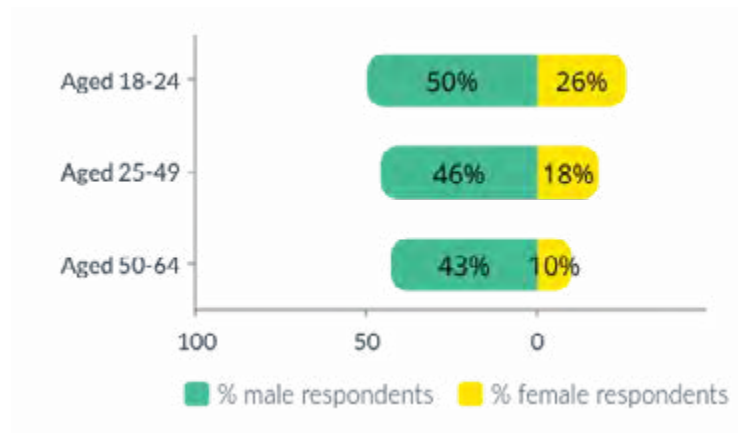


There is a clear difference of opinion between male and female respondents. far fewer women than men thought that conflicts were caused by land and water disputes.



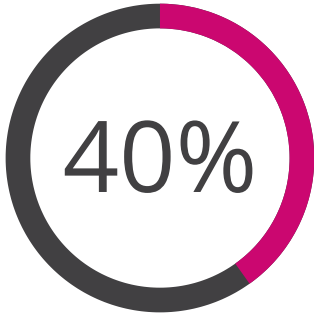
of respondents said that conflict over water and land occurs every few months in their communities

Conflicts are caused by water disputes

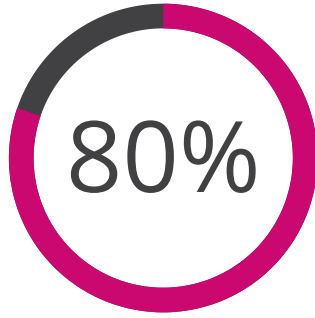


"There are a lot of things causing conflict arising from climate change, such as encroachment on other people's lands...Conflict prevents communities from reaching solutions and...they ignore the main issue, which is drought." - Agriculture Specialist

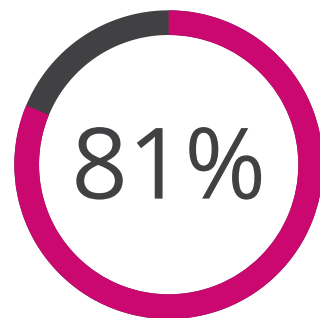
"[Conflict] can have profound and multifaceted impacts on livelihoods. These impacts are often negative and wide-ranging, affecting various aspects of daily life and [the] economic stability for local communities." - Local Government Representative



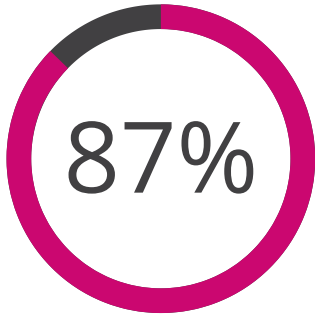
Weakening of social cohesion was the third ranked impact of conflict by respondents



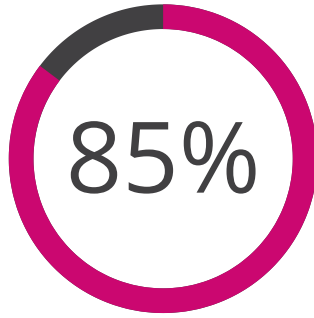
Loss of lives was the second ranked impact of conflict by respondents



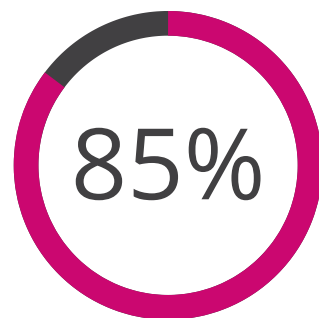
Loss of livelihoods was the top ranked impact of conflict by respondents



87% of respondents agreed that climate change must be addressed to reduce conflict



85% of respondents agreed that we all have a role to play in addressing climate change and conflict



85% of respondents agreed that it is important that youth and women play an active role to maintain peace and stability



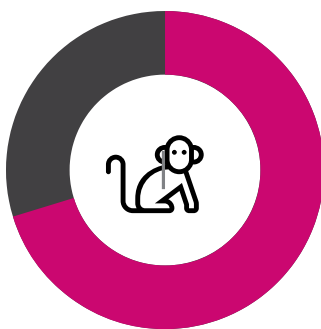
Ecosystem damage, ancestral land and displacement

Papua New Guinea: Autonomous region of Bougainville

Papua New Guinea (PNG) ranks 148 out of 163 countries in its progress towards the Sustainable Development Goals. According to ND-GAIN, it ranks 160 out of 185 countries, a measure of its exposure, capacity to adapt and sensitivity to climate change.

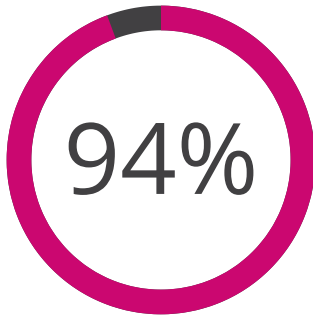
The country is prone to many natural disasters including cyclones, drought, earthquakes, floods, landslides, tsunamis and volcanic eruptions. PNG was ranked #51 on Global Climate Risk Index 2021, much higher than its Pacific counterparts, due to its high vulnerability to climate disasters and impacts. A World Bank study published in 2021 suggests that hazards such as flash floods, landslide, and coastal flooding are all likely to intensify. In this study, 94% of respondents from Bougainville agreed that climate change poses a serious risk to people in their area.

“Environment provides food, shelter, and money...Land is very important to ethnic tribes.”
- Conflict Specialist



70%

of respondents think that "biodiversity" and "ecosystems" are the elements most exposed to climate hazards in their area

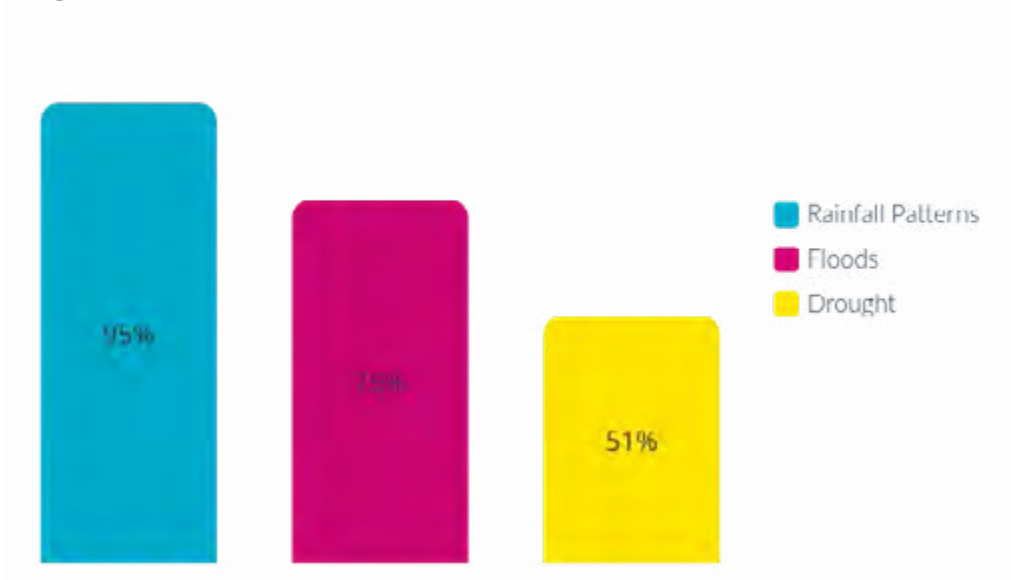


of respondents agreed that climate change poses a serious issue for their communities

“Coastal ecosystems are greatly affected by sea level rise, flood plains are exposed under water for a very long time resulting in considerable loss of...wild life”
- Climate Change Specialist



Highest ranked climate hazards by respondents



% total respondents who said that that the above hazards were issues of concern in their communities.

Which elements are most exposed to climate hazards in your area?



% of total respondents who said that they were concerned about the above elements being exposed to climate hazards

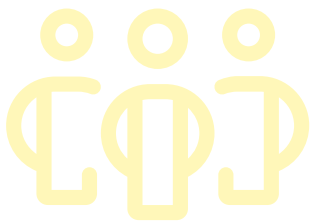


Are any particular groups in the community most affected by the impacts of climate hazards?



% of respondents who agreed that the above groups were most affected by the impacts of climate hazards

when asked how climate change has altered land use in their communities, the highest ranking responses were "deforestation" and "rivers/dams/irrigation"



When asked what actions their community are taking to overcome the challenges brought about by climate change, the highest ranked response was "resource-sharing agreements"

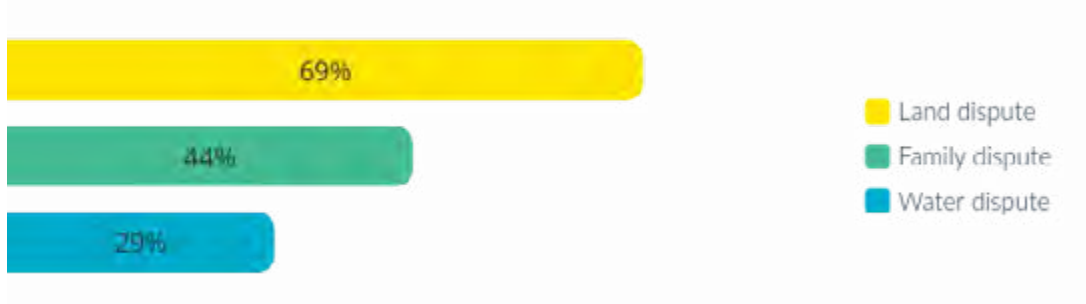
"Activities we have done with the help of peace mediators include things like water management associations [supported by] church organisations"
- Local Government Representative



What is preventing communities from overcoming these challenges brought about by climate change?



Highest ranked causes of conflict



% of all respondents by cause of conflict



“The consequences of these conflicts on local communities in Panguna have been clan fights/displacement of tribal groups, land dispossession and displacement of bigger communities into smaller hamlets. Children don’t get access to proper education in conflict affected areas.” - Community Member

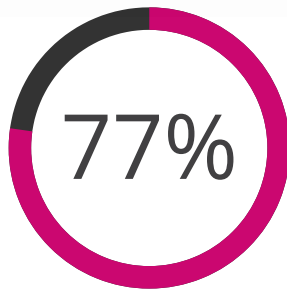
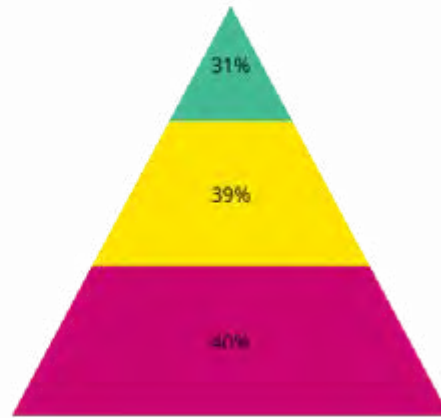
Almost one third (28%) of respondents said that displacement was an impact of conflict on their daily lives



How does conflict impact your daily life?

highest ranked responses by % all respondents

- ▲ Weakening of social cohesion
- ▲ Less access to food
- ▲ Ecosystem damage



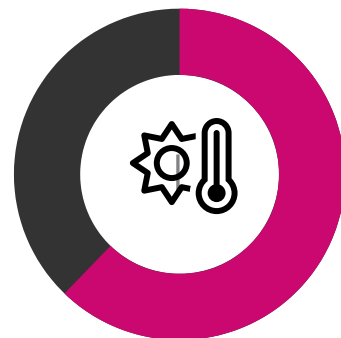
of respondents trust tribal leaders to resolve conflicts

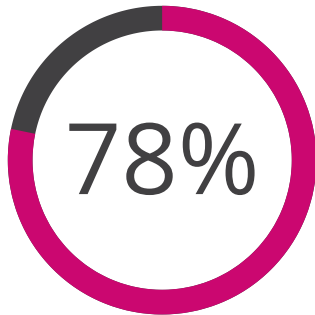


"Climate change will [have an] impact on conflict issues. It will increase and trigger more conflict as more health issues [arise]. Beliefs about Sorcery will increase. Conflict has impacted or might impact on climate change [by] creating barriers for people to work together to address [this] issue." - Community Member

78%

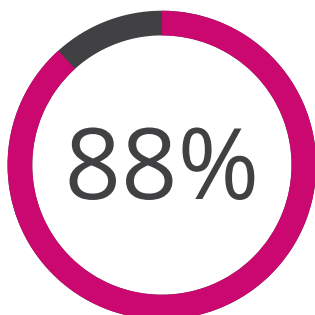
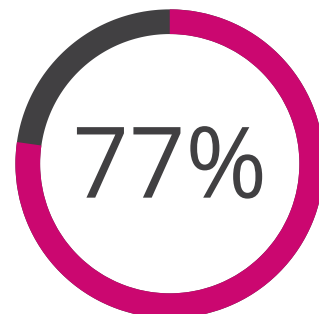
of respondents agree that climate change worsens existing conflict





of respondents agree that if the negative impacts of climate change increase, conflict in their area will increase too

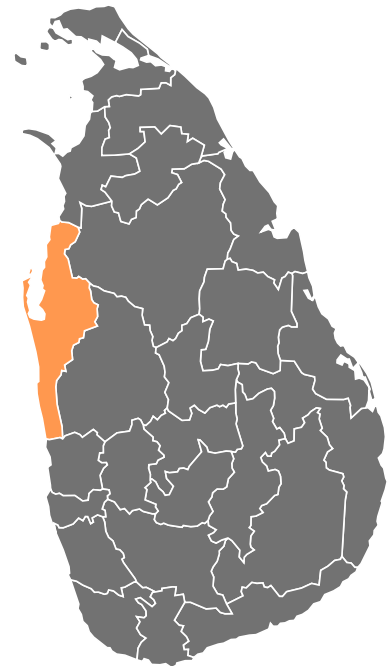
of respondents agree that if the negative impacts of climate change reduce, conflict in their area will also reduce.



of respondents agree that climate change must be addressed to reduce conflict

Water scarcity, fish yields and community disputes

Puttalam, Sri Lanka

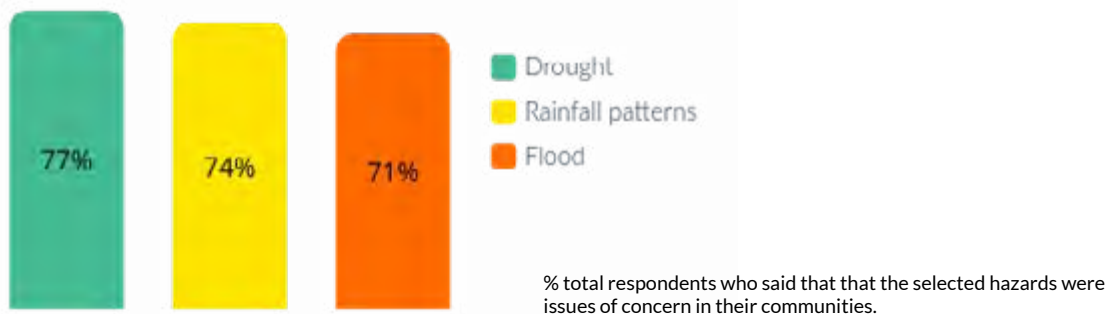


Sri Lanka currently rates 83 out of 163 countries in its progress towards the Sustainable Development Goals. According to the ND-Gain index, it ranks 124 out of 185 countries, a measure of its exposure, capacity to adapt and sensitivity to climate change.

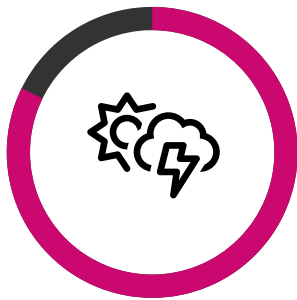
A 2021 World Bank report said, "Sri Lanka's high temperatures, unique and complex hydrological regime, and exposure to extreme climate events make it highly vulnerable to climate change." The Sri Lankan Ministry of Environment's report to the UNFCCC also emphasised the risks associated with climate hazards, especially human health and livelihoods in the coastal areas.

This study in Puttalam highlights the fragility of coastal communities and their livelihoods.

Highest ranked climate hazards



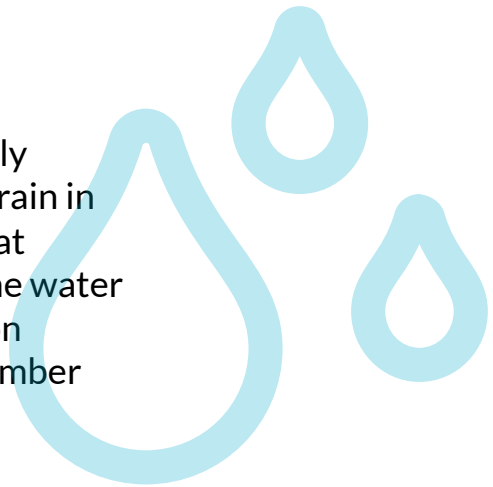
"The people in the area have experienced hot weather with a sufficient amount of ground water for agriculture, but this time heat is unbearable and the ground water is not enough for agriculture." - Community Member



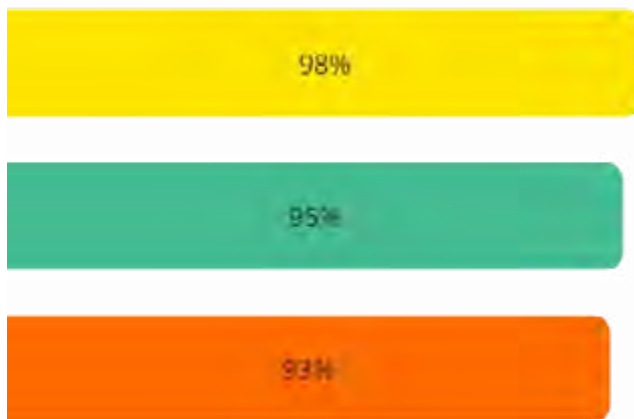
83%

of respondents agreed that climate change poses a serious threat to their communities

"The weather patterns of the area [are] totally upside down: less amount of annual rain (no rain in 2022); rainy seasons have changed (late); heat (more); the ground water level is very low; the water level of the lagoon has gone down; and lagoon fishing yields are very low." - Community Member

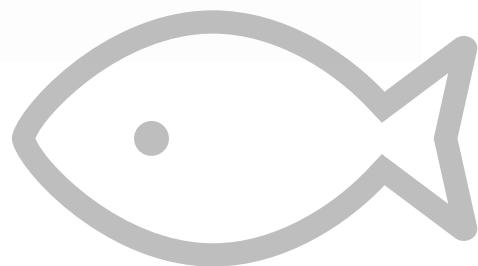


Which elements are most exposed to climate hazards in your area (highest ranked by respondents)?

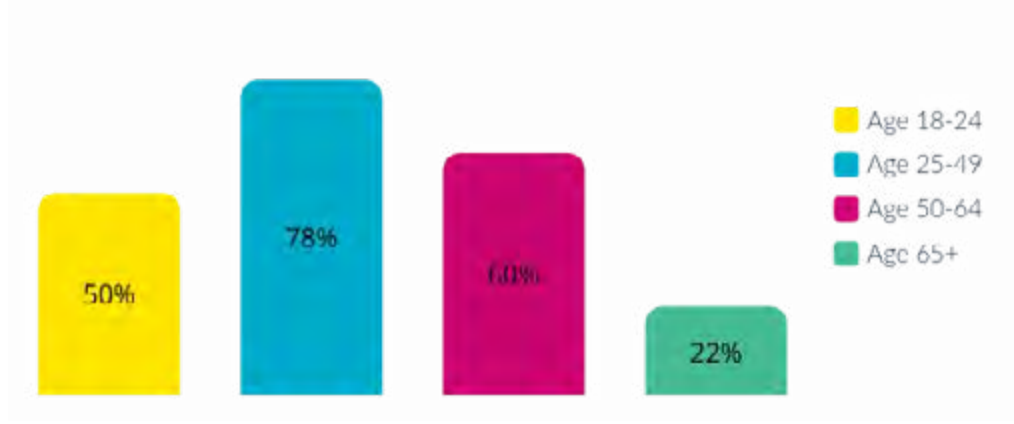


- People
- Livelihoods
- Water quality

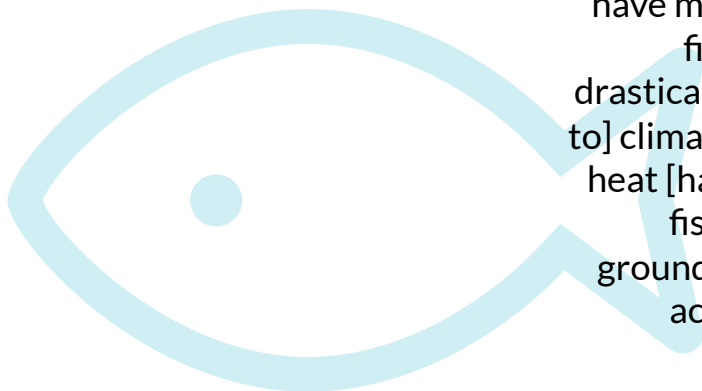
% of total respondents who said that that they were concerned about the above elements being exposed to climate hazards



"Loss of livelihoods" was the highest ranked (72% of all respondents) negative impact of climate change on people's lives.



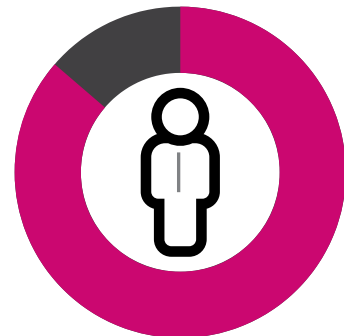
% of respondents by age who said that "loss of livelihoods" was a negative impact of climate change on their lives



"Fishing communities in Puttalam have many difficulties. Mainly the fishing harvest has declined drastically [in the] recent past [due to] climate change...The unbearable heat [has affected the] low lagoon fishing harvest. Low levels of ground water [has resulted in] no access to drinking water and cooking water."
- Community Member

86%

of respondents (92% of all men and 75% of all women) agreed that **men** were some of the most affected by the impacts of climate change.* This could be because fishing is traditionally a male occupation in Sri Lanka.



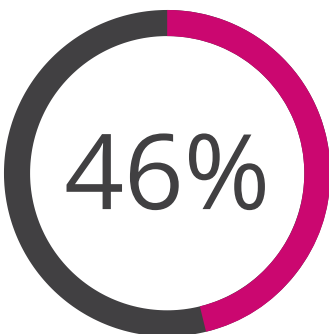
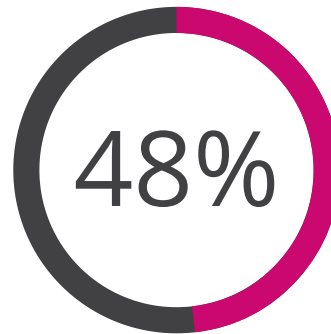
* This is compared with 75% of respondents who agreed that women were the most affected group (75% of men and 75% of women).

"Fish in the lagoon have decreased drastically; the caught fish are very small and the catching quantity is also very low." - Community Member

"No fish means many social conflicts." - Community Member

COMMUNITY DISPUTES

was the highest ranked security concern amongst all respondents

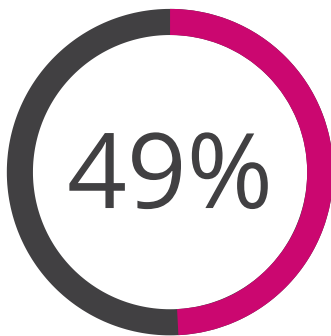
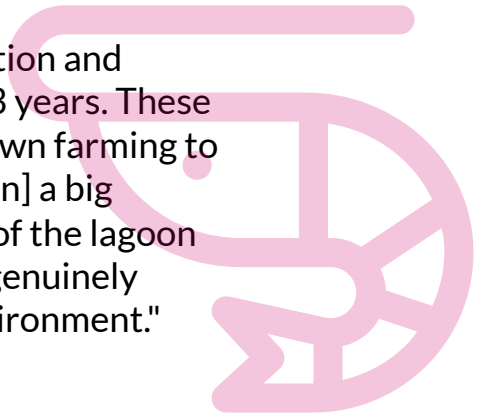


respondents said climate change was exacerbating conflict in their area by increased competition over decreasing resources

It was the highest ranked example of how climate change exacerbates conflict in their area

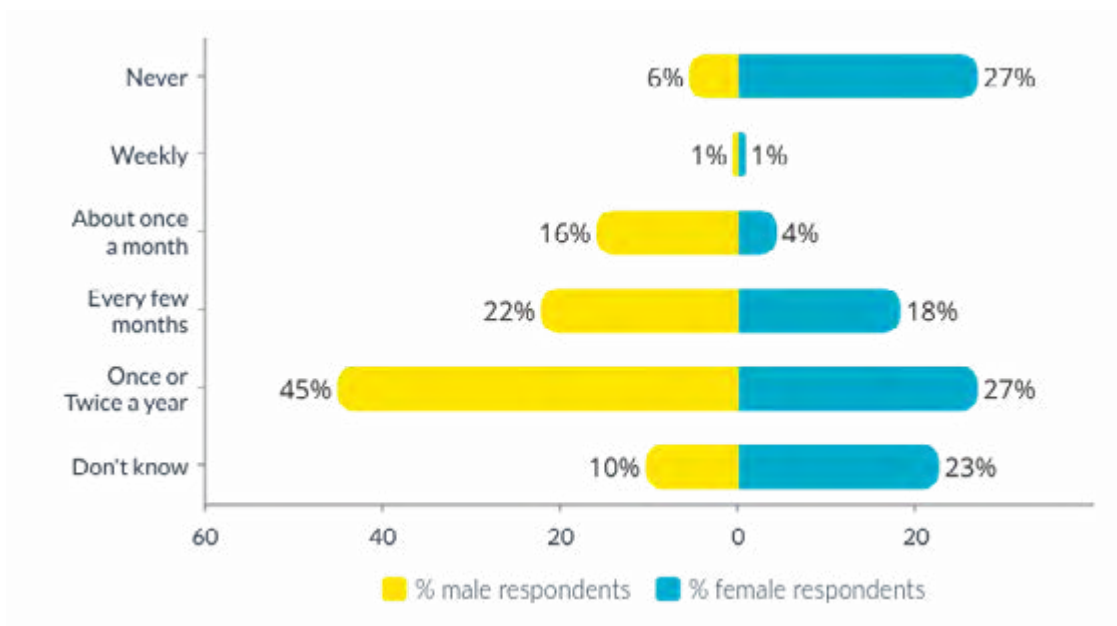
"There are big concerns about industrialisation and agricultural activities, especially the last 2-3 years. These concerns arose with the introduction of prawn farming to Puttalam district. In recent years [it has been] a big environmental concern, the consequences of the lagoon pollution. Local residents in Puttalam...are genuinely concerned about protecting the lagoon environment."

- Conflict Specialist



When asked which actions communities take to cope with climate change could be an obstacle to peace, the highest ranked response was "monopolising resources"

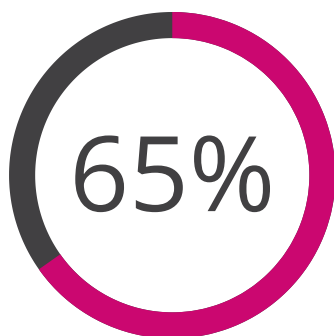
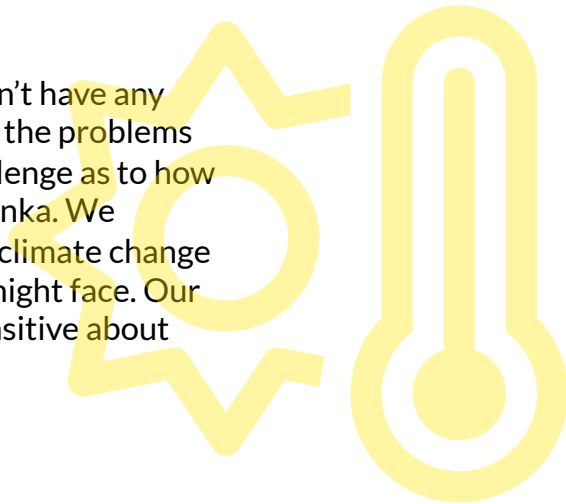
In the past 12 months, how often have you organised or attended any peace building activities that have helped your community cope with climate change?



How have other organisations (government, civil society, aid agencies, religious groups etc.) helped communities overcome some of the challenges associated with climate change?



"In Sri Lanka what we can see is that we don't have any public policy or social consciousness about the problems that we...are facing. So, there is a huge challenge as to how to bring these issues to the public...in Sri Lanka. We haven't even started...a public dialogue on climate change and the issues...that Sri Lanka specifically might face. Our development programmes are not very sensitive about this." - Conflict Specialist



of respondents think that we all have a role to play in addressing climate change and conflict

ENDNOTES

- ⁱ UK Research and Innovation. [‘A brief history of climate change discoveries.’](#)
- ⁱⁱ IPCC (2023) [Climate Change 2023 Synthesis Report Summary for Policymakers](#)
- ⁱⁱⁱ International Food Security Network (FSIN) and Global Network Against Food Crises (GNAFC) (2023) [Global Report on Food Crises \(GRFC\) 2023](#), p7.
- ^{iv} UNHCR (16 June 2022) [‘Global displacement hits another record, capping decade-long rising trend’](#)
- ^v United Nations Security Council (26 January 2023) [‘With Highest Number of Violent Conflicts Since Second World War, United Nations Must Rethink Efforts to Achieve, Sustain Peace, Speakers Tell Security Council’](#)
- ^{vi} United Nations Security Council (24 May 2018) [Resolution 2471](#).
- ^{vii} <https://www.discover.ukri.org/a-brief-history-of-climate-change-discoveries/index.html>
- ^{viii} Koubi, V. (May 2019) [‘Climate Change and Conflict’](#), Annual Review of Political Science 22:1, pp343-360
- ^{ix} Adger, W.N., J.M. Pulhin, J. Barnett, G.D. Dabelko, G.K. Hovelsrud, M. Levy, Ú. Oswald Spring, and C.H. Vogel, (2014) Human security. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 755-791.
- ^x Fischetti, M. (2 March 2015) ‘Climate change hastened Syria’s civil war’, Scientific American.
- ^{xi} Nordqvist, N. and Krampe, F. (September 2018) ‘Climate change and violent conflict: Sparse evidence from South Asia and Southeast Asia’, SIPRI Insights on Peace and Security.
- ^{xii} World Economic Forum (January 2023) [The Global Risks Report 2023](#). p31.
- ^{xiii} Ibid, pp31–33.
- ^{xiv} United Nations Security Council. (12 May 2023). [Protection of civilians in armed conflict - Report of the Secretary-General \(S/2023/345\) \[EN/AR/RU/ZH\]](#)
- ^{xv} Insecurity Insight, [Conflict and Hunger](#).
- ^{xvi} Muhammad Raisalat Rafiq, Kazi Matin Ahmed A.S.M. Woobaidullah and Ashraf Ali Seddique.(2017). Resistivity Survey and Saline Water Intrusion in and Around Cox’s Bazar in Bangladesh. Barisal University Journal Part 1, 4(2):351-360 (2017)
- ^{xvii} International Food Security Network (FSIN) and Global Network Against Food Crises (GNAFC) (2023) Global Report on Food Crises (GRFC), p69.
- ^{xviii} UN Environmental Programme (UNEP) (June 2007) Sudan post-conflict environmental assessment.
- ^{xix} FSIN and GNAFC (2023) p14.
- ^{xx} UN Climate Change (UNCC) (n.d.) ‘The Paris Agreement’
- ^{xxi} Mission Newswire (1 August 2023) [‘Hunger has risen, says new report’](#)
- ^{xxii} UNHCR (16 June 2022) [‘Global displacement hits another record, capping decade-long rising trend’](#)
- ^{xxiii} United Nations Security Council (26 January 2023) [‘With Highest Number of Violent Conflicts Since Second World War, United Nations Must Rethink Efforts to Achieve, Sustain Peace, Speakers Tell Security Council’](#)
- ^{xxiv} United Nations Security Council (24 May 2018) [Resolution 2417](#).
- ^{xxv} Sakaguchi, K., Varughese, A., and Auld, G. (December 2017) [‘Climate Wars? A Systematic Review of Empirical Analyses on the Links between Climate Change and Violent Conflict’](#), International Studies Review, 19:4, pp622–645.
- ^{xxvi} Maria Fantappie (10 October 2019) ‘Widespread Protests Point to Iraq’s Cycle of Social Crisis’ [Crisis Group](#).
- ^{xxvii} David Smith. (1 November 2014). ‘Power struggle in Burkina Faso after Blaise Compaoré resigns as president’ [The Guardian](#)
- ^{xxviii} Naila Rafique. (26 October 2023) ‘Beyond the Protests: Sri Lanka’s Aragalaya Movement and the Uncertain Future’ [Freedom House](#).
- ^{xxix} Stewart F. (9 February 2002) ‘Root causes of violent conflict in developing countries’, BMJ, 324(7333):342-5. doi: 10.1136/bmj.324.7333.342. PMID: 11834564; PMCID: PMC1122271.
- ^{xxx} Adger, et al, 12.5.1
- ^{xxxi} Ibid
- ^{xxxii} Ibid, 12.5.4
- ^{xxxiii} Ibid
- ^{xxxiv} Ibid, 12.5.2
- ^{xxxv} Nicolas Niarchos. (May 24, 2021) The New Yorker: [The Dark Side of Congo’s Cobalt Rush](#).

^{xxxvi} Adger et al, 12.5.3

^{xxxvii} Mercy Corps (23 October 2023) [Unlocking climate finance for fragile states](#).

^{xxxviii} UN Security Council, May 2023

^{xxxix} ReliefWeb. (19 October 2023). '[Joint call for action by humanitarian, climate and development organisations to support the demand for the Loss and Damage Fund](#)'

^{xl} United Nations Convention to Combat Desertification (26 April 2022) '[Chronic land degradation: UN offers stark warnings and practical remedies](#)

^{xli} United Nations Secretary General (27 July 2019) '[Every Year, 12 Million Hectares of Productive Land Lost, Secretary-General Tells Desertification Forum, Calls for Scaled-up Restoration Efforts, Smart Policies](#)'

^{xlii} World Resources Institute (30 May 2014) '[Atlas of Forest and Landscape Restoration Opportunities](#)'

^{xliiii} The National Archives (2 November 2021) <https://webarchive.nationalarchives.gov.uk/ukgwa/20230418175226/> <https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use/>

^{xliv} World Bank (2018) Mitigating drought impacts in Drylands: Quantifying the potential for strengthening crop and livestock-based livelihoods, Eds. Carfagna, F., Cervigni, R. & Fallavier P.

^{xlv} Reij, C. (unpublished) 'Long-term trends in agriculture and environment in Boubacar, Yama', CILSS and Free University Amsterdam, Niger.

^{xlvi} World Vision (7 September 2021) [Evidence brief: Do no harm for faith groups case studies in Kenya and El Salvador](#)



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