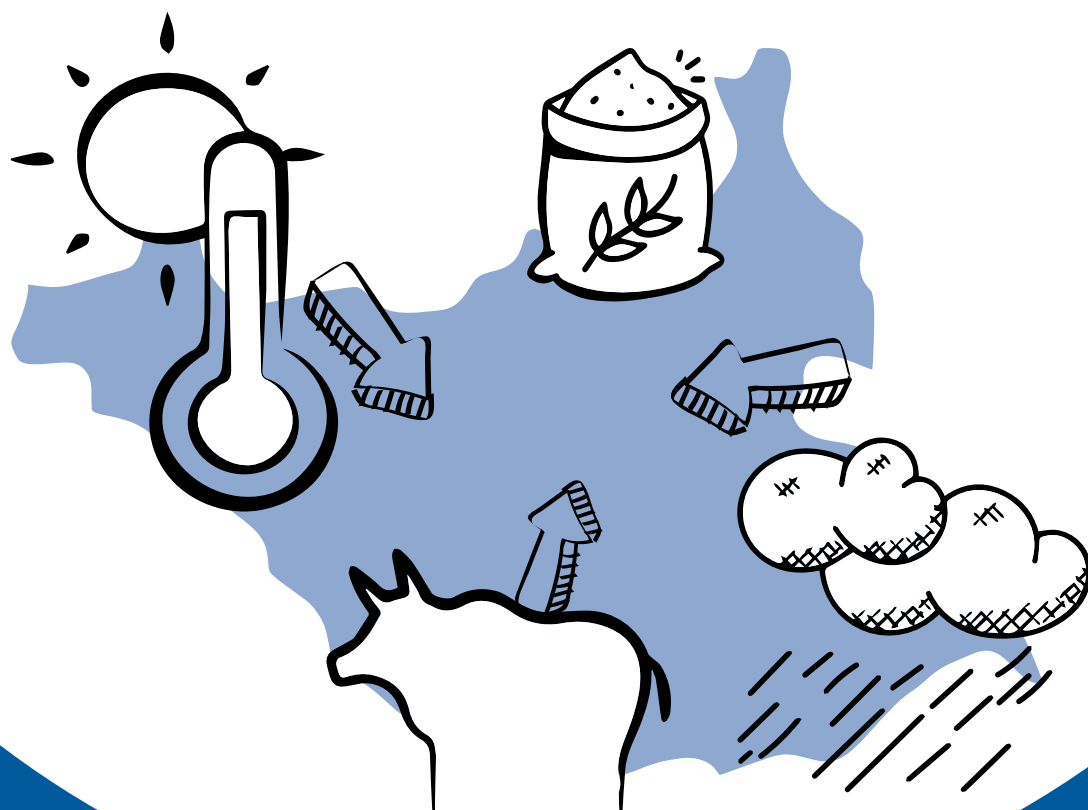


CLIMATE SECURITY IN SOUTH SUDAN

FINDINGS FROM THE 2024 PUBLIC
PERCEPTIONS OF PEACE SURVEY

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November 2024



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About Us

Detcro, LLC is a management, research, and advisory company with offices in Washington, D.C. and Juba, South Sudan. Our team has more than 50 years of combined experience serving as intermediaries between communities and international development partners across Africa.

<http://detcro.com>

PeaceRep is a research consortium based at Edinburgh Law School. Our research is rethinking peace and transition processes in the light of changing conflict dynamics, changing demands of inclusion, and changes in patterns of global intervention in conflict and peace/mediation/transition management processes.

PeaceRep.org

Acronyms

CSO	Civil Society Organisation
CSRF	Conflict Sensitivity Resource Facility
FAO	Food and Agriculture Organization
FCDO	Foreign, Commonwealth and Development Office
FES	Friedrich-Ebert-Stiftung
HDP	Humanitarian, Development and Peace
HLP	Housing, Land and Property
IDP	Internally Displaced Person
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PeaceRep	Peace and Conflict Resolution Evidence Platform
POC	Protection of Civilians
SSRRC	South Sudan Relief and Rehabilitation Commission
UNDP	United Nations Development Programme

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Key Findings and Recommendations

- This policy brief presents data on perceptions of climate security from the most recent wave of the South Sudan Public Perceptions of Peace Survey. The 2024 round of this poll captured the views of 4,769 South Sudanese in 15 locations across all ten states and one administrative area, encompassing urban, rural and internally displaced person (IDP) camp environments.
- For the first time, this survey has been able to show that across South Sudan, people are not just aware of climate change, but that they have also experienced adverse effects of climate change on livelihoods, displacement, and conflict. There is a need for coordinated action by the government and international partners to strengthen climate security, adaptation, and disaster preparedness.
- South Sudan faces a unique climate challenge in that its population already grapples with acute humanitarian needs driven by violent political conflicts, hyperinflation and forced displacement, exacerbated by the war in neighbouring Sudan. Climate extremes interact with these humanitarian conditions to produce an ever-more complex crisis.
- There is a mutually reinforcing relationship between climate change and conflict. On the one hand, armed conflict, particularly through its impact on food security and displacement, increases the population's vulnerability to climate extremes. On the other hand, climate extremes reinforce conditions of marginalization, exploitation, and social disintegration that are conducive to intercommunal violence.
- South Sudanese are very familiar with climate change. Eighty-six percent of respondents are aware of climate change, and 87 percent agree that their community understands its impacts. Ninety-three percent of respondents believe climate change directly affects their community, with significant impacts felt in locations such as Rubkona, Malakal, Gogrial West, Bor South and Pibor.
- People across the country have firsthand experiences of the impacts of climate change. 67 percent of respondents report community members displaced due to flooding or droughts in the past three years. Fifty-three percent of respondents have personally been displaced, particularly in Rubkona, Malakal, Gogrial West, Bor South and Pibor. Displacement is also correlated with decreased feelings of safety.
- Climate extremes are having far-reaching impacts on food security and livelihoods across all the 15 locations surveyed. Eighty-nine percent of respondents agree that climate change has severely impacted farming practices, while 79 percent note its impact on pastoralist activities. Eighty-nine percent of respondents believe food security has been negatively impacted by flooding, and 86 percent report significant damage to the local economy.
- A majority of survey respondents, and particularly men, report that climate change affects conflict. Sixty-seven percent of respondents link increased disagreements over resources like land and water to climate change. Seventy percent believe climate change has exacerbated violent conflicts between farmers and herders. Climate change is also seen as a factor in increased cattle-raiding and politically motivated conflicts.
- Levels of satisfaction with institutional responses to climate change vary. Fifty-four percent of respondents feel that the government is doing enough to address climate change impacts, while two-thirds believe international partners are sufficiently active. Dissatisfaction with the government's response is higher in IDP camps, while dissatisfaction with international partners is higher in rural areas.
- Except for a few questions, there is a gender difference in how men and women perceive the impact of climate change. Most female and male respondents broadly share the view that climate change is affecting their lives, but men are somewhat more likely to report negative impacts of climate change, particularly on conflict, displacement, the economy, and pastoralism. Women are less likely to report that governmental and international actors are doing enough to address climate change. Further scrutiny is required to explain these differences.

Recommendations

The following recommendations are primarily targeted at the government of South Sudan and international actors working across the humanitarian, development and peace (HDP) nexus:

Climate-informed conflict analysis and early warning

- Place local knowledge and locally-collected data front and centre in conflict analysis.
- Investigate further the varied impact of climate change, including across gender, age and location.
- Use existing analytical frameworks to assess climate security risks.
- Enhance data collection, analysis, and research capacities of South Sudanese institutions and actors working on climate security.
- Foster interdisciplinary dialogue on climate security between researchers, governmental and non-governmental actors, and international stakeholders.
- Ensure that new early warning and environmental risk platforms are complementary and integrate local perspectives on climate change.
- Conduct long-term analysis of climate change trends to inform strategic forward-planning and resourcing.

Climate security and programming across the HDP nexus

- Address the interplay between climate change, displacement, resource scarcity, political transition and conflict.
- Mainstream climate change considerations into humanitarian, development and peace activities, where appropriate.
- Think and work politically when responding to climate security risks.
- Explore opportunities for environmental peacebuilding in situations where intercommunal natural resource management can create incentives for cooperation.
- Ensure that efforts to strengthen South Sudan's food security and climate resilience are gender- and conflict-sensitive, including the recently announced \$33 million Watershed Approaches for Climate Resilience in Agro-pastoral Landscapes Project.
- Formulate long-term responses to chronic climate change-induced displacement.

1. Introduction

South Sudan is among the most vulnerable countries to climate change and ranks second globally for being at risk of humanitarian crises and disasters.¹ For the past five years, South Sudan has experienced record-breaking floods and extreme heat in parts of the country due to climatic changes. The floods in 2020 and 2021 reached especially devastating levels, eliminating entire villages. The flooding has displaced hundreds of thousands of people, destroyed farms and killed livestock across South Sudan. Pastoralist communities are forced to venture further afield in search of water and pasture, where they often come into conflict with other cattle-herding communities or with farmers. Flood-induced displacement is also giving rise to housing, land and property (HLP) disputes as displaced populations often have no option but to settle on land that does not belong to them.² The impacts of climate change, including

flood-induced migration of cattle-herders, and responses to climate change are deeply intertwined with elite political interests and the wider conflict system.³

This policy brief presents data on perceptions of climate security from an opinion poll conducted by Detro Research and Advisory and the Peace and Conflict Resolution Evidence Platform (PeaceRep) and funded by the United Kingdom Foreign, Commonwealth and Development Office (FCDO). The poll, conducted between March and June 2024, just before the onset of the rainy season, captured the views of 4,769 people in 15 locations across all ten states and one administrative area, encompassing urban, rural and IDP camp environments.⁴ In addition to questions about climate change and its impacts in their communities, respondents were asked about their daily experiences of safety, drawing on indicators of ‘everyday peace’ developed through qualitative research during the project’s inception phase.⁵



South Sudan has experienced record-breaking floods and extreme heat in parts of the country due to climatic changes forcing pastoralist communities forced to venture further afield in search of water and pasture, where they often come into conflict with other cattle-herding communities or with farmers.

A key line of analysis in this brief concerns climate security. In this brief, climate security is broadly understood to describe conditions under which individuals and communities have the capacity to manage the climate change-related risks to their physical safety and the realization of their human rights.⁶

- 1 2025 *INFORM Risk Index*, Inter-Agency Standing Committee Reference Group on Risk, Early Warning and Preparedness and the European Commission, available at <https://drmkc.jrc.ec.europa.eu/inform-index/INFORM-Risk/Results-and-data>.
- 2 This is giving rise to a host of humanitarian challenges. For example, Nuer communities displaced due to flooding in northern Jonglei in 2021 have taken up residence in an old fire station in Malakal Town. Due to their status as flood victims from another state, they are ineligible to receive humanitarian assistance and have not been permitted to resettle in Malakal Town.
- 3 James Kunhiak Muorwel, Jan Pospisil, Veronica Igale Monoja, Caught Between Crises in South Sudan: *Flood-Induced Migration of Dinka Bor Cattle Herders in the Equatoria Region*, Friedrich Ebert Stiftung (FES) (Dec. 2023), available at https://peacerep.org/wp-content/uploads/2023/12/FES-Climate-security_Caught-between-crisis-in-South-Sudan_Dec-2023.pdf.
- 4 While the survey is not statistically representative for all of South Sudan, a convenience sample of 15 counties was selected to represent the principal regions and conflict theatres in South Sudan. The research team used an approximately self-weighting stratified random sampling approach to select households, and then individuals within households. This method centered on a randomization strategy implemented using ArcGIS and the GRID3 South Sudan Settlement Extents, Version 01.01 dataset. For each workday, enumerators began at randomly drawn map coordinates and followed a random walk guided by smartphone apps. Enumerators recorded responses using KoboToolbox smartphone software. See Center for International Earth Science Information Network (CIESIN), Columbia University and Novel-T. 2021, GRID3 South Sudan Settlement Extents, Version 01, Geo-Referenced Infrastructure and Demographic Data for Development (GRID3), available at <https://doi.org/10.7916/d8-khpa-pq09>.
- 5 The study drew from the Everyday Peace Indicator (EPI) methodology to develop measures of everyday safety through interviews and focus groups across five of the survey locations in January and February 2020. This process produced five questions which were asked in each survey. The responses were then translated into an aggregate index of daily safety. See Pamina Firchow and Roger Mac Ginty, *Measuring peace: Comparability, commensurability, and complementarity using bottom-up indicators*, *International Studies Review* (2017).
- 6 Drawing on existing literature dealing with the conceptualisation and definition of ‘climate security’, including in Karen O’Brien, *Are we missing the point? Global environmental change as an issue of human security*, *Global Environmental Change* 16:1 (2006), available at <https://doi.org/10.1016/j.gloenvcha.2005.11.002> and Matt McDonald, *Climate change, security and the institutional prospects for ecological security*, *Geforum* 155 (2024), available at <https://doi.org/10.1016/j.geforum.2024.104096>

Climate security is a significant concern in South Sudan given the way climate extremes exacerbate existing political, social and economic vulnerabilities, and increase political competition, thereby contributing to violence and conflict. The survey data suggests that there is a mutually reinforcing relationship between climate change and conflict, confirming earlier studies that pointed to a 'vicious cycle' between climate extremes and conflict.⁷ On the one hand, armed conflict, particularly through its impact on food security and displacement, increases the

population's vulnerability to climate extremes. On the other, climate extremes reinforce conditions of marginalization, exploitation, and social disintegration that are conducive to intercommunal violence.

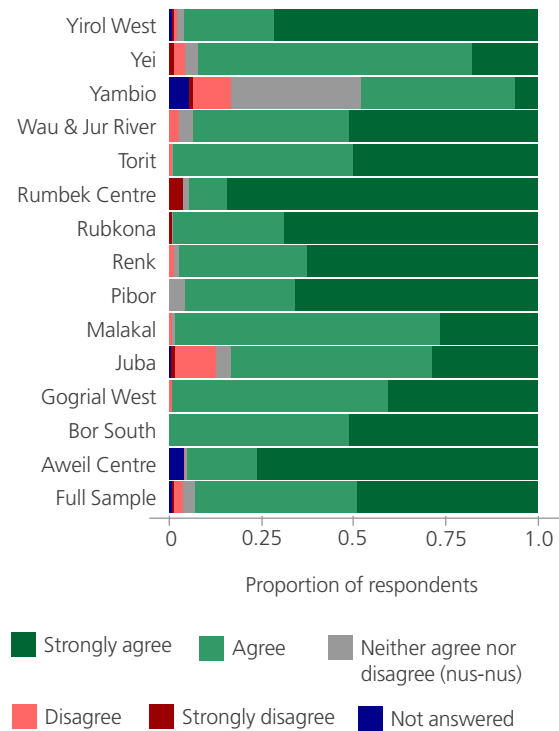
The brief starts by presenting survey data on awareness of climate change and its impacts, followed by a discussion of data on displacement, food security, livelihoods, conflict, and institutional responses. Gender differences in survey responses are highlighted where relevant.

⁷ See, e.g., Grazia Pacillo, Leonardo Medina, Theresa Liebig, Bia Carneiro, Frans Schapendonk, Alessandro Craparo, et al., *Measuring the climate security nexus: The Integrated Climate Security Framework*, PLOS CLIM 3:10, p.3 (2024), available at <https://doi.org/10.1371/journal.pclm.0000280>

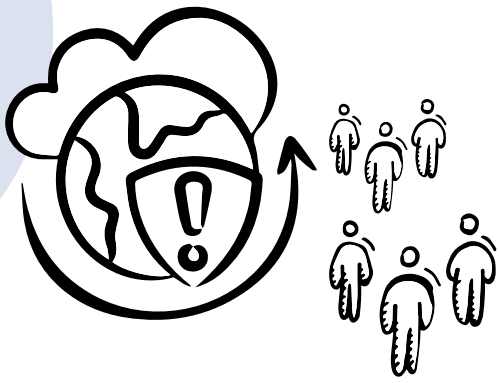
2. Awareness and Impacts of Climate Change

The opinion polling data reflect widespread familiarity with the term ‘climate change’ and the impacts that changing weather conditions are having on populations across South Sudan. Eighty-six percent of respondents said they know what climate change is and 87 percent agreed with the statement, ‘My community is aware about climate change and its impacts’.⁸ Ninety-three percent of respondents said that climate change directly affects their community (see Figure 1), with virtually no difference between responses from female and male survey participants. A majority of respondents in Rubkona, Malakal, Gogrial West and Pibor felt that climate change has impacted their area more than other areas in South Sudan (Figure 2). In general, the data reflects communities’ exposure to climate-related events, with locations in the Equatorias – especially Yambio and Yei, to a lesser extent Juba – showing lower awareness than areas in Greater Bahr-el-Ghazal and Greater Upper Nile.

FIGURE 1
Agree/Disagree: ‘Climate change and changing weather conditions directly affect my community.’ x Location (2024) (N = 4,769)



The opinion polling data reflect widespread familiarity with the term ‘**climate change**’ and the **impacts** that changing weather conditions are having on populations across South Sudan.



⁸ The main outlier was Yambio, where 78 percent of respondents did not know what climate change means and just 35 percent said their community was aware about climate change and its impact. This is consistent with Western Equatoria being among the states that have had the least exposure to flooding over in recent years.

FIGURE 2
How severely has climate change affected people in your area compared to other areas in South Sudan? x Location (2024) (N = 4,769)

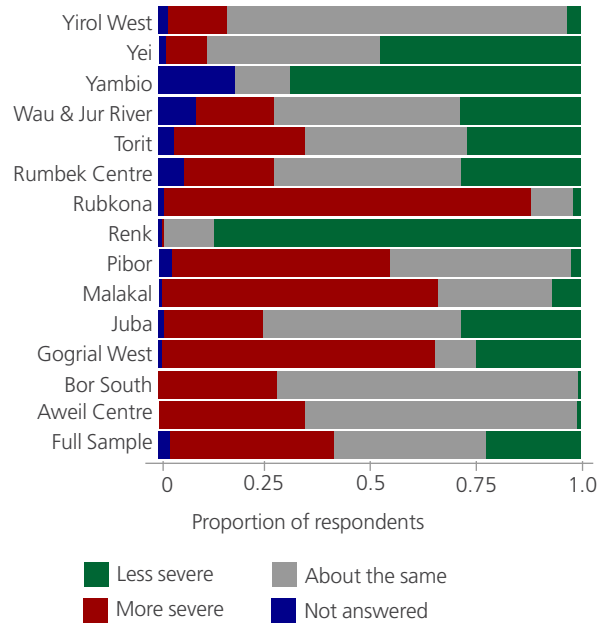
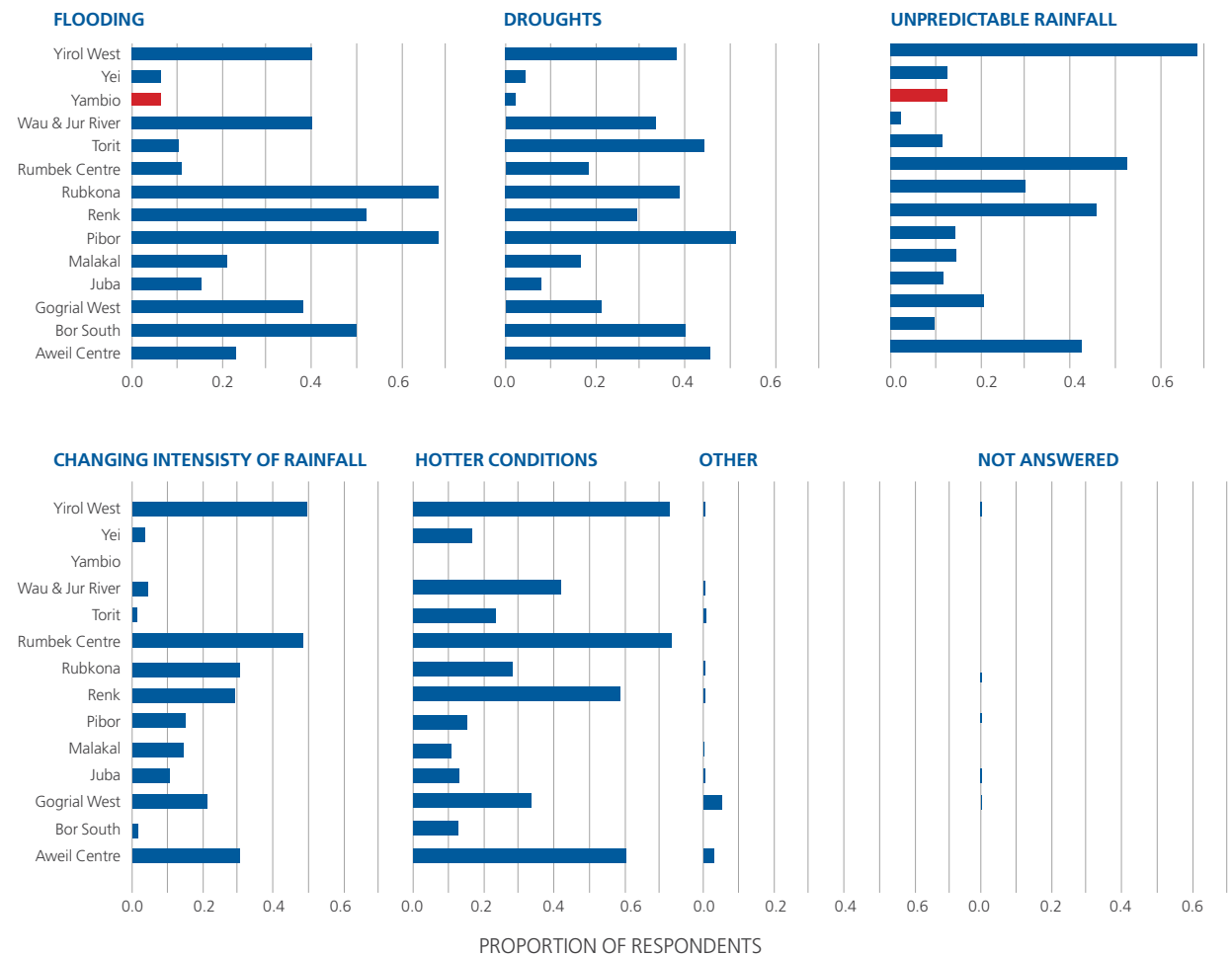


Figure 3 shows the types of climate change impacts that communities have experienced across the survey locations. The most prevalent impact was flooding (33%) followed by hotter conditions (30%) and drought (27%) with little to no difference between responses by female and male participants. It should be noted that data collection took place during a heat wave in South Sudan, which caused schools to be closed for a period of two weeks. This may have caused respondents to gravitate towards this response more than they otherwise would have.

It should be noted that data collection took place during a **heat wave** in South Sudan, which caused **schools to be closed** for a period of **two weeks**.



FIGURE 3
What are the main impacts of climate change that your community has experienced? x Location (2024) (N = 4,769)



3. Climate-induced Displacement

Among the most severe impacts of climate change in South Sudan is displacement. 2024 has proven to be another difficult year for the country. The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) estimated in October 2024 that flooding affected more than 1.3 million people and displaced about 327 thousand individuals. Another flood assessment from 2022 estimated that more than 2 million people across South Sudan were affected by flooding.⁹ Floods add to the already acute displacement crisis caused by conflict in the country and the influx of returnees and refugees fleeing the war in Sudan.

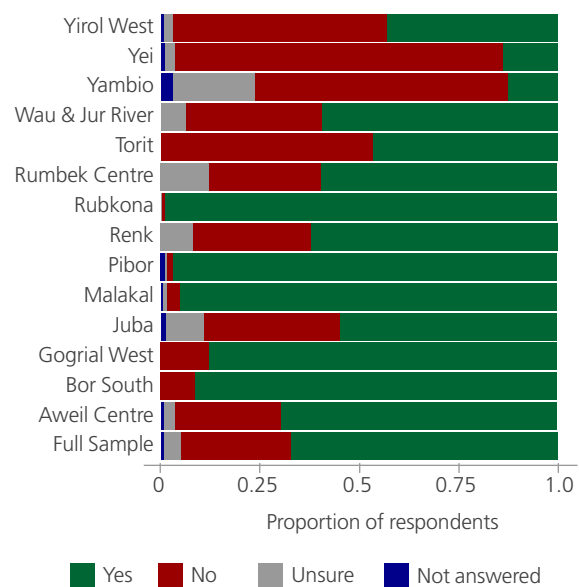
The current historic levels of flooding and projections of increased Nile streamflow in Uganda over the coming decades are of significant concern in South Sudan.¹⁰ Lake Victoria experienced record water levels earlier this year and the Government of Uganda was forced to release surplus water into the Nile, reaching South Sudan in September 2024.¹¹ The record water levels in some localities are prompting discussions around whether the climate-induced displacement of some populations may be permanent.¹²

Sixty-seven percent of respondents said that members of their community had been displaced by flooding or droughts in the past three years (see Figure 4), with male respondents being more likely to report displacement in their community – 74 percent of male respondents answered ‘yes’ compared to 61 percent of female respondents. Fifty-three percent of respondents said that they personally had been displaced (see Figure 5). Men were again more likely to report

displacement (60% of male respondents compared 47% of female respondents). The most acute displacements were reported in Rubkona, Pibor, Bor South and Malakal, where more than 90 percent of respondents said that they had personally been displaced by flooding within the past three years.

FIGURE 4

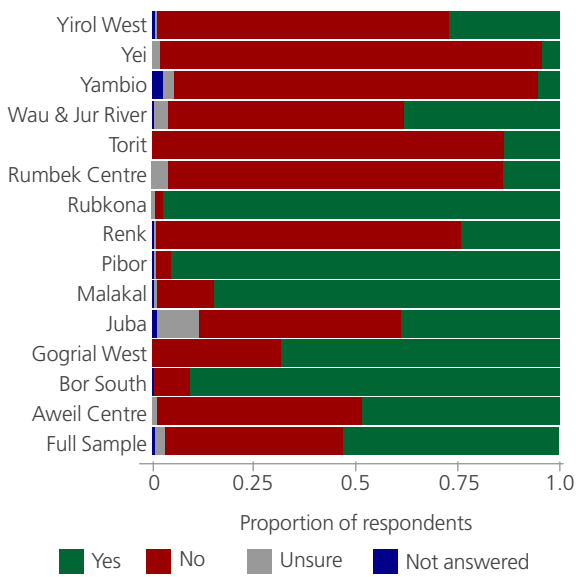
Have members of your community been displaced due to flooding and/or droughts in this area in the past three years? x Location (2024) (N = 4,769)



- 9 An assessment that the University of Juba, South Sudan Relief and Rehabilitation Commission (SSRRC) and United Nations Development Programme (UNDP) conducted in 2022 found that 2.6 million people had been affected by flooding throughout South Sudan. See *Flood Assessment in South Sudan*, Juba University, SSRRC, UNDP (Nov. 2022), available at <https://www.undp.org/south-sudan/publications/flood-assessment-report-south-sudan#:~:text=More%20than%202%20million%20people,devastation%20wrought%20by%20the%20floods>.
- 10 Solomon H. Gebrechorkos, Meron T. Taye, Behailu Birhanu, Dawit Solomon, and Teferi Demissie, *Future Changes in Climate and Hydroclimate Extremes in East Africa*, *Earth's Future* 11:2 (2023), available at <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2022EF003011>.
- 11 South Sudan Situation Report #323, World Food Program (WFP) (31 May 2024), available at <https://reliefweb.int/report/south-sudan/wfp-south-sudan-situation-report-323-31-may-2024#:~:text=Major%20flooding%20is%20expected%20in,is%20expected%20from%20June%20onwards>.
- 12 Liz Stephens and Jacob Levi, *South Sudan floods: the first example of a mass population permanently displaced by climate change?*, *The Conversation* (10 Sep. 2024), available at <https://theconversation.com/south-sudan-floods-the-first-example-of-a-mass-population-permanently-displaced-by-climate-change-238461>.

FIGURE 5

Have you yourself been displaced due to flooding and/or droughts in this area in the past three years? x Location (2024) (N = 4,769)



The opinion polling data also shows a correlation between climate-induced displacement and perceived safety. Respondents who had been displaced by flooding were twice as likely to report a lack of safety in response to the

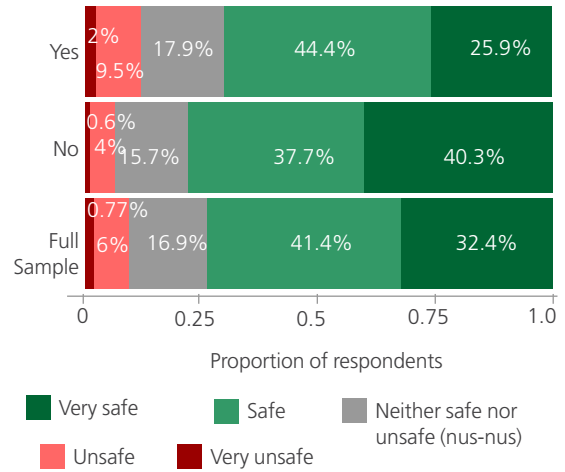
indicators of ‘everyday peace’ as those who had not been displaced by flooding in the past three years (see Figure 6).

FIGURE 6

Individuals displaced by flooding/drought in the past three years x Perceived safety (2024) (N = 4,628)

In the past three years, I personally have been displaced due to flooding and/or droughts in this area.

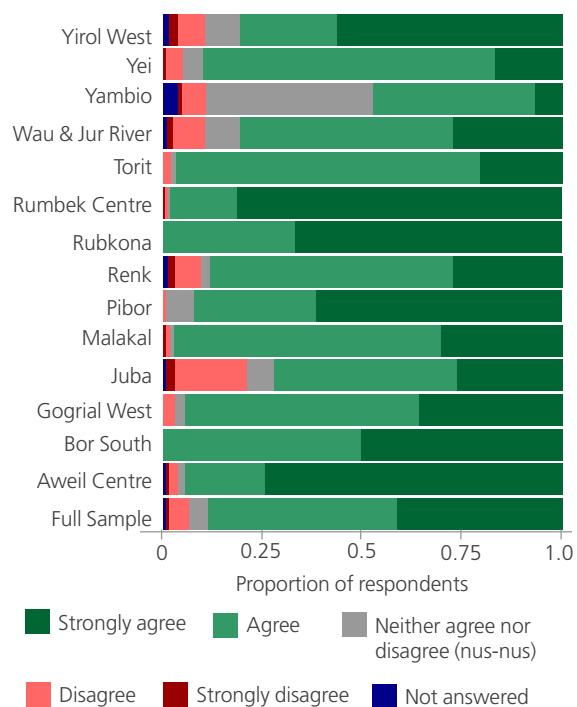
N= 4628; Year= 2024



4. Impacts on Food Security and Livelihoods

Climate change is disrupting farming practices and people’s ability to secure pasture and water for their cattle and livestock. According to the Food and Agriculture Organization (FAO), flooding in South Sudan in 2021 destroyed more than 37 thousand tons of crops and killed nearly 800,000 livestock.¹³ Eighty-nine percent of respondents ‘agreed’ or ‘strongly agreed’ that climate change and changing weather conditions have had a major impact on farming practices in their area (see Figure 7), and 79 percent said that it had a major impact on pastoralist practices (see Figure 8). Male respondents were slightly more likely to report impact on farming (91% of male respondents compared to 87% of female respondents), but significantly more likely to report impact on pastoralist practices (86 percent of male respondents reporting impacts compared to 73 percent of female respondents). The latter may be explained by the more prominent role men play in pastoralism in the country and their higher exposure to pastoralism-related climate change impacts.

FIGURE 7
Agree/Disagree: ‘Climate change and changing weather conditions have had a major impact on farming practices in this area.’ x Location (2024) (N = 4,769)



89% of respondents ‘agreed’ or ‘strongly agreed’ that climate change and changing weather conditions have had a major impact on **farming practices** in their area, and **79%** said that it had a major impact on **pastoralist practices**.

According to the Food and Agriculture Organization (FAO), flooding in South Sudan in 2021 destroyed more than **37 thousand tons of crops** and killed nearly **800,000 livestock**.

¹³ Flood Impact Report: South Sudan, FAO (Dec. 2021), available at https://www.fao.org/fileadmin/user_upload/faoweb/South-Sudan/FAOSS-Flood-Impact-Report-Dec-2021.pdf.

FIGURE 8

Agree/Disagree: 'Climate change and changing weather conditions have had a major impact on pastoralist activities in this area.' x Location (2024) (N = 4,769)

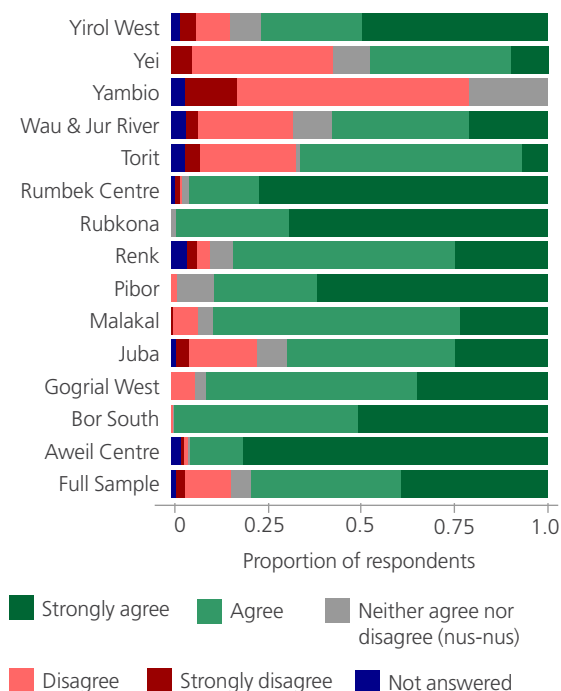
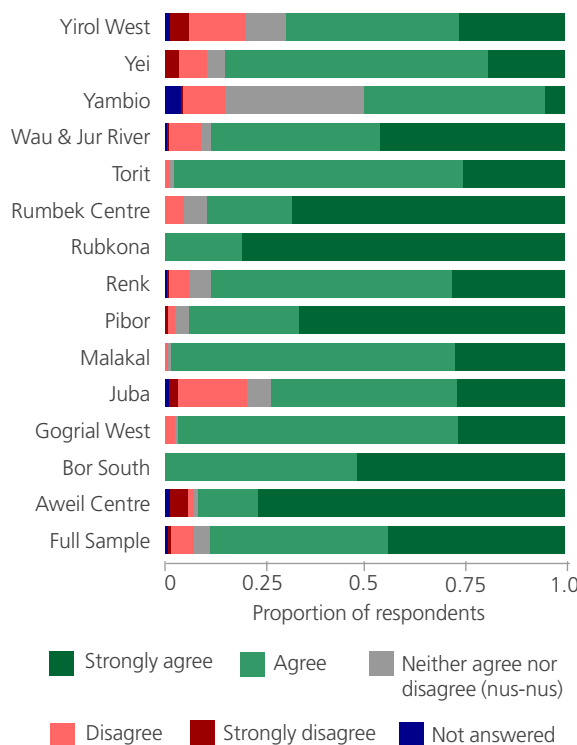


FIGURE 9

Agree/Disagree: 'Food security is negatively impacted by flooding and/or droughts.' x Location (2024) (N = 4,769)



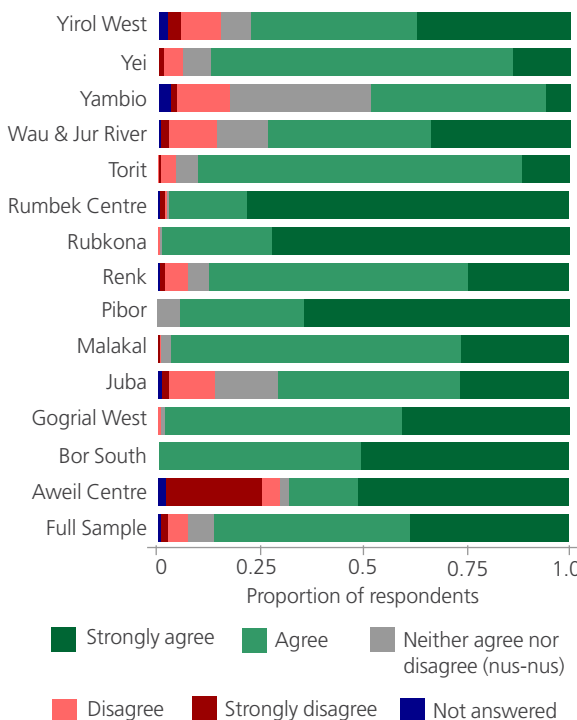
The consequent impact of these disruptions to food security, livelihoods and the broader economy was acutely felt by respondents. Eighty-nine percent of respondents agreed that food security was negatively impacted by flooding (see Figure 9), and 86 percent agreed that climate change and changing weather conditions have severely damaged the local economy in their area (see Figure 10). Male respondents were more likely to report negative impacts in both cases, with 90 percent of male respondents reporting impact compared to 83 percent of female respondents when asked about the economy, and 91 percent of male respondents reporting impact compared to 86 percent of female respondents when asked about food security.

89% of respondents agreed that **food security** was negatively impacted by flooding, and **86% agreed** that climate change and changing weather conditions have severely **damaged the local economy** in their area.



FIGURE 10

Agree/Disagree: 'Climate change and changing weather conditions have severely damaged the economy in this area.' x Location (2024) (N = 4,769)



5. Impacts on Conflict

Climate change has complex and concerning impacts on patterns of violence in conflict-affected countries. Across contexts, researchers find consistent correlations between climate extremes and armed conflict and violence, but do not agree on why and how they relate.¹⁴ Some studies link climate extremes to intercommunal violence through resource competition, and, at the extreme, claim to have found a ‘biological mechanism’ governing the relationship.¹⁵

Other studies highlight that political institutions mediate the relationship between climate and conflict, and that there is no direct link otherwise.¹⁶ In particular, climate extremes increase the likelihood of violence under conditions of political and social marginalization, limited intercommunity dialogue, and political competition.¹⁷ One study asserts that ‘a focus on resources is superficial, as these [intercommunal] struggles reflect broader social tensions.’¹⁸ This latter view squares with literature on the politics of famine, which debunks the idea that populations faced with resource stress will annihilate each other.¹⁹ Instead, mass starvation and violence hinge on political calculations.²⁰ Civil wars give rise to political dynamics that both make populations more vulnerable to climate change, and, in the presence of climate extremes,

establish mediating conditions of marginalization and social disintegration that are conducive to intercommunal violence.

Competing elite interests and flooding have clearly increased competition for access to land, pasture and water in South Sudan.²¹ However, this only translates into conflict in situations where social processes for equitable sharing of natural resources have broken down, and where forced displacement has unsettled social networks and undermined their resilience to conflict. Migratory routes for pastoralists have been disrupted, forcing them to venture farther afield for water and pasture for their animals. In the absence of effective intercommunal mechanisms for mediating the relationship, they are brought into conflict with other pastoralists and with farming communities in those areas. In cases where it is in the interest of national elites for cattle-herders to compete for resources further afield, climate-induced migration becomes entangled with the political economy of South Sudan’s conflict system. Flood victims often have no choice but to settle on land belonging to other people, and institutions of land administration lack the capacity to address the longer-term issues associated with HLP rights of host and displaced populations, sowing the seeds of future conflict.²²

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 - 15 Cullen S. Hendrix and Idean Salehyan, *Climate Change, Rainfall, and Social Conflict in Africa*, *Journal of Peace Research* 49:1 (2012); Jean-François Maystadt, Margherita Calderone, and Liangzhi You, *Local Warming and Violent Conflict in North and South Sudan*, *Journal of Economic Geography* 15: 3 (2015).
 - 16 Katharine J. Mach, et al., *Climate as a Risk Factor for Armed Conflict*, *Nature* 571:7764 (2019); Vally Koubi, *Climate Change and Conflict*, *Annual Review of Political Science* 22 (2019).
 - 17 Hanne Fjelde and Nina von Uexkull, *Climate Triggers: Rainfall Anomalies, Vulnerability and Communal Conflict in Sub-Saharan Africa*, *Political Geography* 31:7 (2012); Andrew M. Linke, et al., *Rainfall Variability and Violence in Rural Kenya: Investigating the Effects of Drought and the Role of Local Institutions with Survey Data*, *Global Environmental Change* 34 (2015); Ole Magnus Theisen, *Climate Clashes? Weather Variability, Land Pressure, and Organized Violence in Kenya, 1989–2004*, *Journal of Peace Research* 49:1 (2012).
 - 18 Clionadh Raleigh and Dominic Kniveton, *Come Rain or Shine: An Analysis of Conflict and Climate Variability in East Africa*, *Journal of Peace Research* 49:1, p. 53 (2012).
 - 19 Thomas Robert Malthus, *An Essay on the Principle of Population: Or, a View of Its Past and Present Effects on Human Happiness*, Ward, Lock and Company (1890).
 - 20 Alex de Waal, *Mass Starvation: The History and Future of Famine*, John Wiley & Sons (2017).
 - 21 Nihal Tiitmamer, Ranga Gworo, and Tim Midgley, *Climate change and conflict in South Sudan: Community perceptions and implications for conflict-sensitive aid*, Conflict Sensitivity Resource Facility (2023), available at <https://www.csrfsouthsudan.org/repository/climate-change-and-conflict-in-south-sudan-community-perceptions-and-implications-for-conflict-sensitive-aid/> and Bodhi Global Analysis, *Environment, conflict and peace in South Sudan: Implications for conflict sensitive aid*, Conflict Sensitivity Resource Facility (2024), available at <https://www.csrfsouthsudan.org/repository/environment-conflict-and-peace-in-south-sudan-implications-for-conflict-sensitive-aid/>.
 - 22 In some places, host communities have accused wealthy elites of using flood-related displacement as a pretext to grab communal lands, further exacerbating already existing trends towards land concentration and fueling intercommunal tensions. See David K. Deng, *Conflict Sensitivity Analysis: Considerations for the Humanitarian Response in Mangalla*, Conflict Sensitivity Resource Facility (CSRF) (28 Oct. 2020), available at <https://www.csrfsouthsudan.org/repository/conflict-sensitivity-analysis-considerations-for-the-humanitarian-response-in-mangalla/>.

Survey data shows that South Sudanese are keenly aware of this relationship between climate change and conflict. Two-thirds of respondents – including every single respondent in Bor South – said that disagreements about natural resources such as land and water have increased because of changing environmental conditions (see Figure 11). Seventy percent of respondents said that climate change has exacerbated violent conflict between cattle-herders and farmers (see Figure 12), 63 percent said it exacerbated cattle-raiding (see Figure 13), and 53 percent said it exacerbated politically motivated violence (see Figure 14).

There are some outliers in the survey data, including with regard to responses from Renk where a clear majority of respondents disagreed with statements relating to climate change-related increases in disagreements about natural resources, cattle-raiding, and politically motivated conflict. These responses may be explained by the more developed nature of Renk’s local economy as compared to other surveyed locations, but Renk and other outliers deserve further scrutiny. In particular, it is worth exploring why certain locations are less likely to report negative impacts of climate change on conflict dynamics despite being affected by climatic changes.

The gender differences in responses to conflict-related survey question is striking. Across all four questions (Figures 11 to 14), men were significantly more likely to report a negative impact of climate change on conflict dynamics. Seventy-seven percent of male respondents reported an increase in disagreements about natural resources due to environmental changes as opposed to 61 percent of female respondents. Male respondents were significantly more likely to report negative impact of climate change on conflict between farmers and cattle-herders (79% of male respondents compared to 61% of female respondents) and instances of cattle raiding (68% of male respondents compared to 58% of female respondents). Male respondents were also significantly more likely to report an increase in politically motivated conflict due to climate change (61% of male respondents compared to 45% of female respondents). Male respondents’ proximity to violence resulting from gender norms and their dominant role in cattle-herding may partly explain these results, but further analysis is required to fully understand the reasons and implications of these findings.

FIGURE 11
Agree/Disagree: ‘Disagreements about natural resources such as land and water have increased because of changing environmental conditions.’ x Location (2024) (N = 4,769)

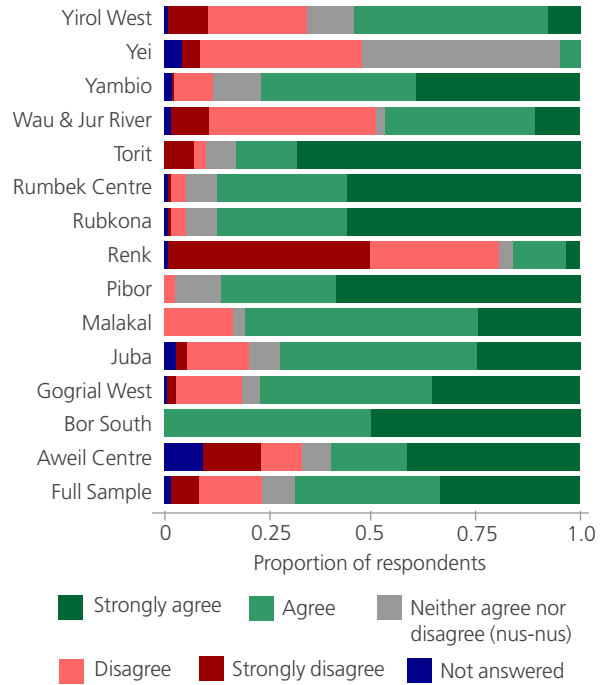


FIGURE 12
Agree/Disagree: ‘Climate change and changing weather conditions have exacerbated violent conflict between farmers and cattle herders in this area.’ x Location (2024) (N = 4,769)

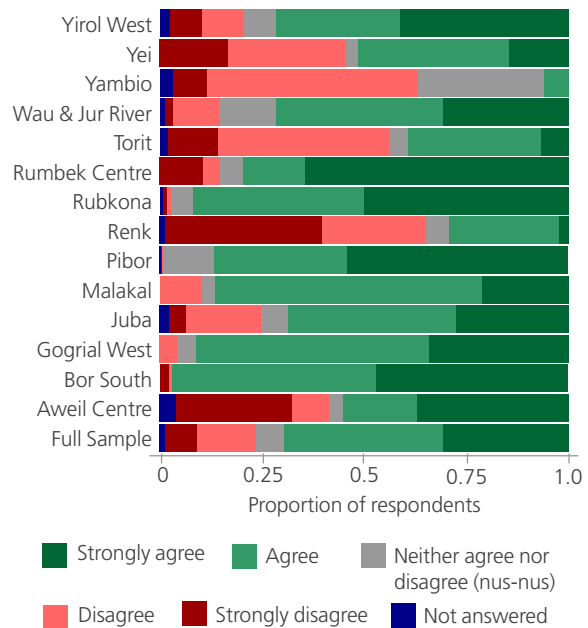


FIGURE 13

Agree/Disagree: 'Climate change and changing weather conditions have exacerbated cattle raiding in this area.' x Location (2024) (N = 4,769)

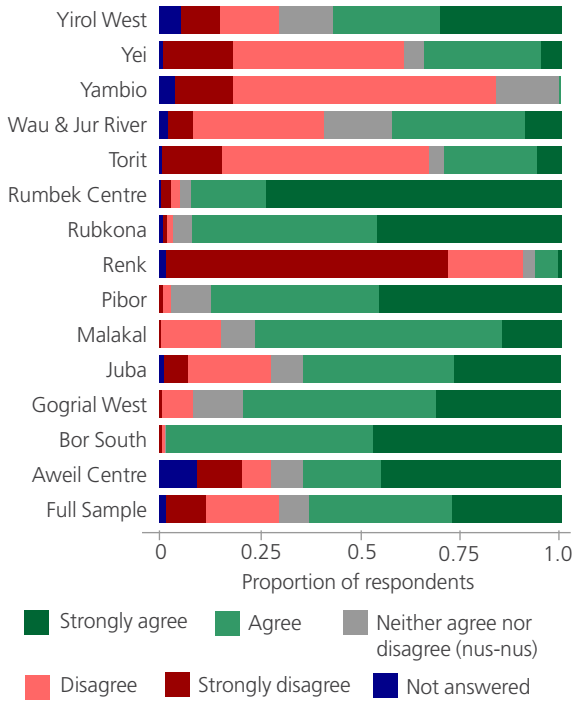
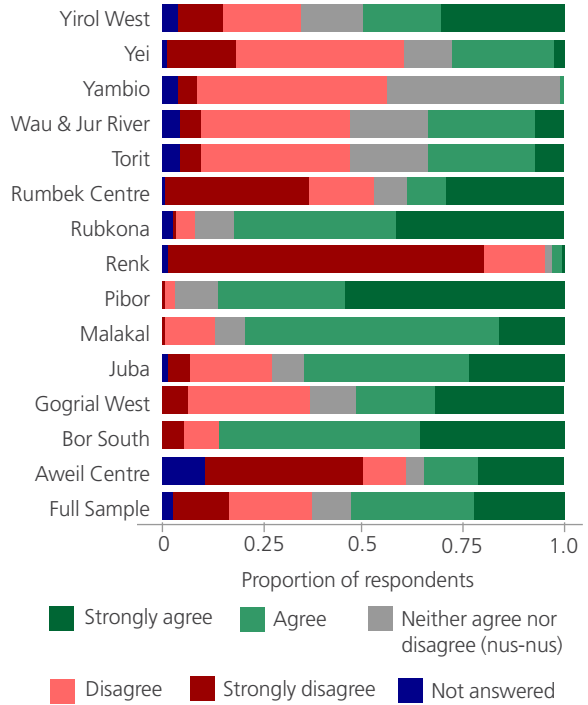


FIGURE 14

Agree/Disagree: 'Climate change and changing weather conditions have exacerbated politically motivated conflict between armed movements in this area.' x Location (2024) (N = 4,769)



6. Institutional Responses

A little more than half (54%) of respondents felt that the government was doing enough to address the impacts of climate change in South Sudan (see Figure 15), considerably less than the two-thirds of respondents that felt that international partners are doing enough (see Figure 16). Interestingly, male respondents were more likely to report that governmental (57% of male respondents and 50% of female respondents) and international actors (72% of male respondents and 61% of female respondents) were doing enough on climate change than female respondents.

Discontent with the government’s response was most pronounced in IDP camps, where 42 percent of respondents felt that the government was not doing enough to address climate change. These viewpoints may be affected by the transitioning of the protection of civilian (POC) sites, the shifting of responsibility for these sites from the United Nations to the Government of South Sudan, and dissatisfaction with the reductions in humanitarian assistance and other services that has ensued. Dissatisfaction with international partners was most pronounced in rural areas, where one in four respondents felt that international partners were not doing enough – this may partly be due to the limited and uneven footprint of international actors in the country.

When asked which institutions were most effective at helping their community to deal with the impacts of climate change, the top three entities were international, with UN agencies being considered the most effective by far (43%),

followed by the United Nations Mission in South Sudan (27%), and international civil society organisations (CSOs) (25%) (see Figure 17). Only 19 percent of respondents found the national government to be the most effective institution in supporting communities to address climate change. There were only marginal differences in the responses from female and male participants, with female respondents being slightly more likely to consider state governments and churches as more effective, and male respondents finding national and international CSOs marginally more effective than female respondents.

The respondents’ favourable view on international actors’ effectiveness relative to others may partly be explained by the significant humanitarian assistance international actors delivered over the last decade. This may particularly be the case where flooding and other climate extremes have contributed to communities becoming reliant on food and livelihood support from international actors. The less favourable view on domestic entities, however, may be concerning to those trying to bolster national ownership and the government’s own capacity to assist communities as they adapt to climate change.

A little more than half of respondents felt that the **government** was doing enough to address the impacts of climate change in South Sudan, considerably less than the two-thirds of respondents that felt that **international partners** are doing enough.

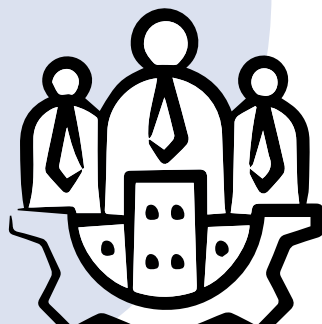


FIGURE 15 Agree/Disagree: The government is doing enough to address the impact of climate change in South Sudan.’ x Survey Environment (2024) (N = 4,769)

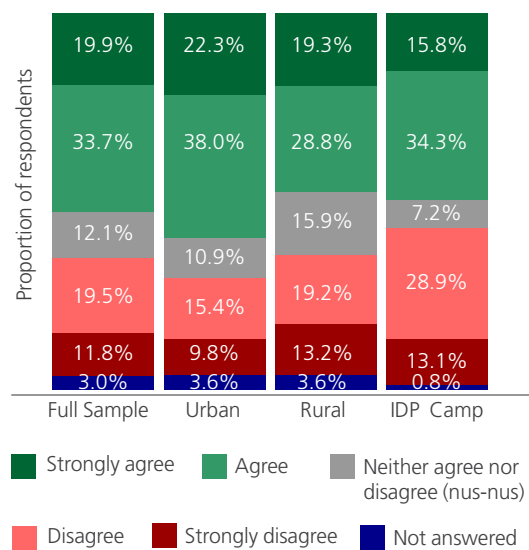


FIGURE 16

Agree/Disagree: International partners are doing enough to address the impact of climate change in South Sudan.' x Survey Environment (2024) (N = 4,769)

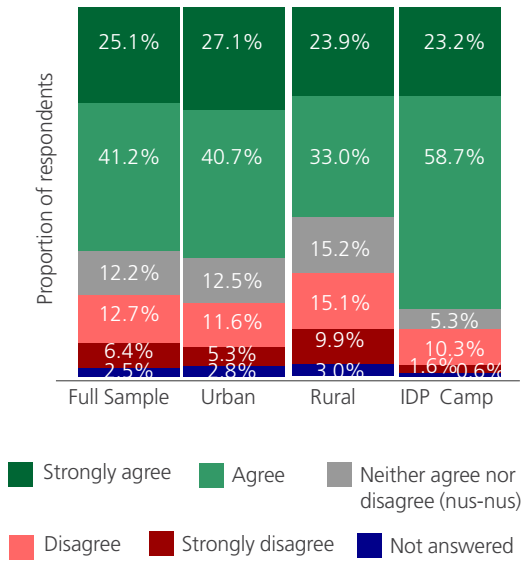
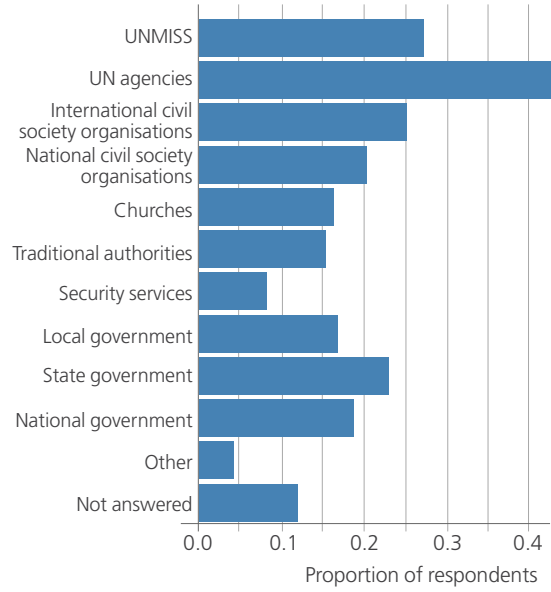


FIGURE 17

Which are the most effective institutions that support your community in dealing with the impact of climate change? (2024) (N = 4,769)



7. Conclusion and Recommendations

Climate change is having profound impacts on communities across South Sudan, as evidenced by the widespread experiences of flooding, displacement, food insecurity, and conflict reported in this survey. For the first time, this survey has been able to show that the communities in South Sudan are not just aware of climate change, but that they link extreme climatic and weather events, such as flooding, to conflict and displacement.

South Sudan faces a unique climate challenge in that its population already grapples with acute humanitarian needs driven by violent political conflicts, hyperinflation and complex forced displacement, exacerbated by the war in neighbouring Sudan. Climate extremes interact with these humanitarian conditions to produce an ever-more complex crisis. The survey data presented here underscores the importance of climate security and immediate action. There

is an urgent need for coordinated action by the government and international partners to address the interplay between climate change, displacement, resource scarcity, political transition and conflict. The current conditions call for a holistic and conflict-sensitive approach. Stakeholders will need to think and work politically as they address immediate humanitarian needs and strengthen disaster preparedness and long-term community resilience and adaptation. If these measures are not implemented at scale, the increasing and mutually reinforcing negative impacts of climate change and conflict are all too predictable.

These recommendations are primarily targeted at the government of South Sudan and international actors working across the humanitarian, development and peace (HDP) nexus:

Climate-informed conflict analysis and early warning

- **Place local knowledge and locally-collected data front and centre in conflict analysis.** Empirical data and evidence on the local impact of climate change in South Sudan is growing, but still scarce. Data collection efforts should be widened and steps taken to triangulate locally-collected climate change perception data with earth observation data, including on droughts, floods, and average temperatures, and conflict and peace data. Practitioners should feed these insights into their conflict analysis cycle.
- **Investigate further the varied impact of climate change, including across gender, age and location.** This survey data shows variation in how local communities perceive climate change impact across localities. Renk is one of those outliers, for example. There are also notable differences in how men and women report about the impact of climate change on conflict, underscoring the need for gender-sensitive analysis.
- **Use existing analytical frameworks to assess climate security risks.** Adapt these methodologies to local needs, as required, and ensure uptake of locally-collected data in assessments. Existing frameworks, such as the Integrated Climate Security Framework²³, the Weathering Risk methodology²⁴, or the approaches and toolkits developed by the UN Climate Security Mechanism²⁵, can support actors in understanding pathways through which climate change affects peace and security.

23 Grazia Pacillo, Leonardo Medina, Theresa Liebig, Bia Carneiro, Frans Schapendonk, Alessandro Craparo, et al., *Measuring the climate security nexus: The Integrated Climate Security Framework*, PLOS CLIM 3:10 (2024), available at <https://doi.org/10.1371/journal.pclm.0000280>.

24 Lukas Rüttinger, Janani Vivekananda, Christian König, Barбора Sedova, *Weathering Risk Methodology Paper*, Adelphi and Potsdam institute for Climate Impact Research 2021, available at https://weatheringrisk.org/sites/default/files/document/Weathering%20Risk%20Methodology%20Paper_0.pdf.

25 United Nations Climate Security Mechanism, *Toolbox: Conceptual Approach*, 2020, available at https://dppa.dfs.un.org/sites/default/files/csm_toolbox-2-conceptual_approach.pdf.

- **Enhance data collection, analysis, and research capacities of South Sudanese institutions and actors working on climate security**, particularly relevant line ministries, civil society and non-governmental actors, and research institutions, such as the University of Juba Center for Peace, Development and Security Studies, and the Institute of Water Studies.
- **Foster interdisciplinary dialogue on climate security** between researchers, governmental and non-governmental actors, and international stakeholders. Bridge the gap between natural and social scientists working in South Sudan and support the development of common research agendas. Connect researchers with policymakers and practitioners to support evidence-based decision-making.
- **Ensure that new early warning and environmental risk platforms are complementary and integrate local perspectives on climate change**, for example those to be developed by the South Sudanese Ministry of Environment and Forestry, the UN Development Programme, the UN Environment Programme, and International Crisis Group.
- **Conduct long-term analysis of climate change trends to inform strategic forward-planning and resourcing**, taking into account the wider political transition in South Sudan and the country's National Adaptation Plan and Nationally Determined Contributions.

Climate security and programming across the HDP nexus

- **Address the interplay between climate change, displacement, resource scarcity, political transition and conflict.** The current conditions call for a holistic and conflict-sensitive approach to climate security. There is an urgent need for coordinated action by the government and international partners to address immediate humanitarian needs and strengthen disaster preparedness and long-term community resilience and adaptation.
- **Mainstream climate change considerations into humanitarian, development and peace activities**, where appropriate. Carefully assess the context-specific relevance of climate change to the area of intervention and critically reflect if linking peacebuilding and adaptation activities is sensible. Community-driven and area-based approaches to programming that are based on evidence and survey findings will help ensure that interventions respond to the specific local needs.
- **Think and work politically when responding to climate security risks.** The survey data clearly shows the potential for climate change to exacerbate politically motivated conflict in South Sudan, particularly in Pibor, Bor South, and Malakal. Cattle migration-related conflict needs to be assessed for possible linkages to elite political interests. Governmental actors need to be held to account for transparent natural resource management and climate-informed action across the HDP nexus.
- **Explore opportunities for environmental peacebuilding** in situations where intercommunal natural resource management can create incentives for cooperation. Ensure local peace agreements, and cattle migration agreements, are climate-informed and flexible enough to accommodate changing climatic conditions. Learn from past efforts, including in other contexts such as Mali or Nigeria, where local peace agreements have specifically addressed agro-pastoralist conflicts.

- **Ensure that efforts to strengthen South Sudan's food security and climate resilience are gender- and conflict-sensitive**, including the recently announced \$33 million Watershed Approaches for Climate Resilience in Agro-pastoral Landscapes Project. This survey underscores the gendered impact of climate change and the significant role climate change plays in livelihoods, farming, and pastoralism.
- **Formulate long-term responses to chronic climate change-induced displacement.** Sixty-seven percent of survey respondents stated that members of their community had been displaced by flooding or droughts in the past three years. Given the current historic levels of flooding and projections of increased Nile streamflow in Uganda over the coming decades, the South Sudanese government and citizens will have to begin difficult conversations about solutions to permanent displacement where persistent flooding will prevent return of IDPs indefinitely.

CLIMATE SECURITY IN SOUTH SUDAN

FINDINGS FROM THE 2024 PUBLIC PERCEPTIONS
OF PEACE SURVEY

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Resolution Evidence
Platform

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