Chapter 13

DRIVERS OF VULNERABILITY AND LOW RESILIENCE IN SUDAN

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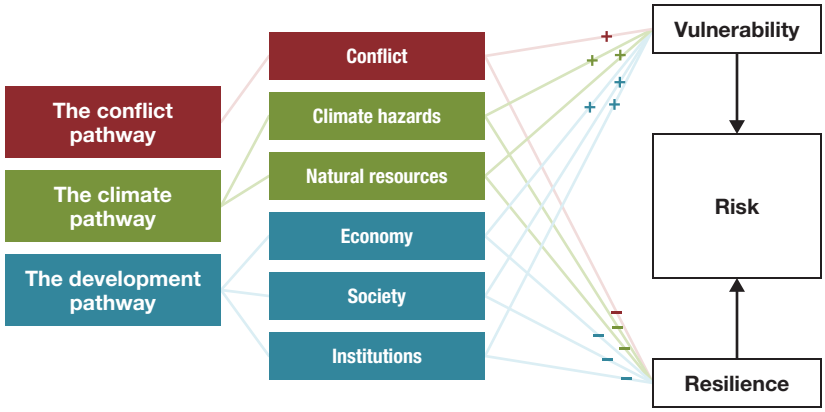
Sudan is currently facing one of the most severe crises in its modern history, with conflict, economic collapse, and climate disasters driving unprecedented levels of instability. Since April 2023, when the conflict erupted between the Sudan Armed Forces (SAF) and the Rapid Support Forces (RSF), the country has experienced a complete breakdown in governance and a near-total collapse of key economic and social structures, leading to one of the world's largest internal displacement crises and an escalating humanitarian emergency.

Risk-informed policymaking is not only essential to prioritize and tackle current challenges but also to foresee future risks and challenges and design policies to address them. To examine the main drivers of risk that exacerbate development challenges in conflict-affected Arab countries, the United Nations (UN) Economic and Social Commission for Western Asia (ESCWA) developed the Arab Risk Monitor (ARM), a comprehensive risk assessment framework to evaluate conflict-, climate-, and development-related risks in the Arab region. It provides quantitative risk indicators to help policymakers, international organizations, and humanitarian agencies understand vulnerability and resilience trends across Arab countries.

This chapter focuses on the main drivers of risk in Sudan. Using the ARM assessment for Sudan, the chapter presents a trend analysis that begins with 2013 and proceeds to 2023. The overarching regional and national analysis presents data for three years (2013, 2018, and 2023) during the 11-year period: 2013 was selected as the base year, after the separation of Sudan and South Sudan in 2011; 2018 was used as a midpoint for the analysis; and 2023 was the most recent year of data availability. Data for the most recent year were used in cases where 2023 data were not available. The chapter begins with an overview of risk vulnerability and resilience, then assesses the different risk pathways, domains, and drivers of risk.

FIGURE 13.1 Conceptual framework for the Arab Risk Monitor



Source: Authors, based on UNESCWA (2023).

Arab Risk Monitor

The ARM aims to identify key risks that could lead to conflict, instability, and humanitarian crises; assess vulnerability and resilience in Arab countries using data-driven analysis; track risk trends over time to provide early warnings and inform policymaking; and support risk-informed decision-making for national governments, UN agencies, and regional organizations. The ARM provides a structured methodology for assessing how different factors—such as political instability, economic fragility, and climate change—combine to increase the likelihood of crises.

The ARM provides measures of risk grouped into three risk pathways, which are associated with a greater risk of conflict, crisis, and instability in the Arab region (Figure 13.1).[1] Within each pathway, the Risk Monitor report provides one or more risk domains:

- The conflict pathway examines historical grievances, one of the strongest predictors of future conflict, as well as a country's enabling security environment. It produces one risk domain (conflict risk).
- The climate pathway looks at the impacts of climate hazards, as well as the availability and management of natural resources. It produces two risk domains (climate hazard risk and natural resource risk).

1 For more details on the conceptual framework, see ESCWA (2023).

- The development pathway represents all the complex dynamics that, in most cases, directly or indirectly cause risk in a country. It produces three risk domains (economic risk, social risk, and institutional risk).

The quantification of risk begins by collecting 45 relevant indicators from internationally comparable data sources. Then, the data are transformed and normalized, resulting in a score from 0 to 1 for 36 drivers of risk to ensure relative comparability across all countries and relevant time periods (from 2000 onward). The drivers of risk are further categorized into vulnerabilities, in which higher scores indicate a higher risk level. In contrast, for assessments of resilience, lower scores indicate higher risk.

The six risk domains are expressed as a combination of two elements: increasing vulnerability and decreasing resilience. Vulnerability is defined in terms of a country's likelihood to experience shocks—specific to violence and armed conflict—and its structural exposure to such shocks. Resilience is defined as a country's policy-driven capacity to absorb negative impacts. For each risk domain, an aggregate score is produced by ESCWA based on a composite model consisting of the 36 drivers that measure vulnerability and resilience (Figure 13.2). The monitor provides a structured methodology for assessing how different factors—such as political instability, economic fragility, and climate change—combine to increase the likelihood of crises.

Sudan: Overall risk

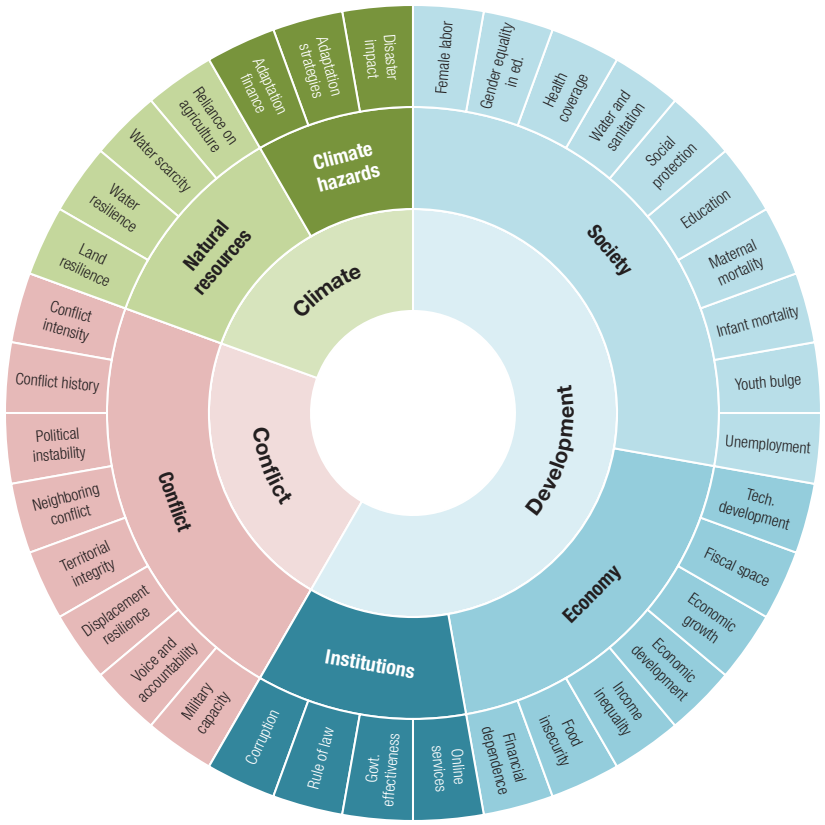
The ARM assessment for Sudan reveals severe vulnerabilities across conflict, climate, and development pathways, with critical weaknesses in resilience (Table 13.1). The overall risk score for Sudan is among the highest in the Arab region, indicating a multifaceted crisis that requires urgent intervention. All three pathways have a risk level of significant or higher, with conflict risk showing the highest risk rating.

TABLE 13.1 Overall risk, Sudan, 2023

Pathway	Vulnerability	Resilience	Overall Score
Conflict	Very High	Very Low	Severe
Climate	High	Low	Significant
Development	High	Low	Significant

Source: Authors, based on UNESCWA (2025).

FIGURE 13.2 Measurement framework for the Arab Risk Monitor

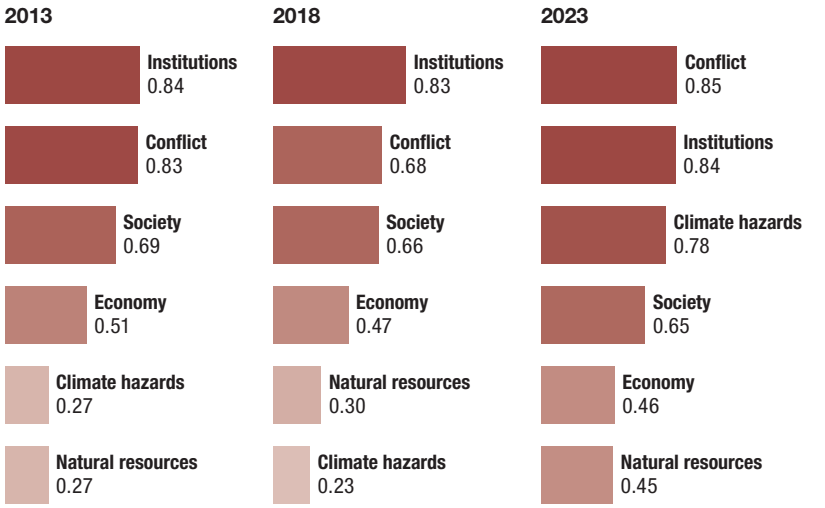


Source: Authors, based on UNESCWA (2025).

At the domain level, conflict and institutional risks are ranked as severe, the highest level of risk. Risks in the natural resources, climate hazards, economy, and society domains are significant. Figure 13.3 shows the trend in risk vulnerability across domains over the past decade. Institutional and conflict vulnerability have remained high over the 2013–2023 period, while vulnerability from climate hazards significantly increased in 2023.

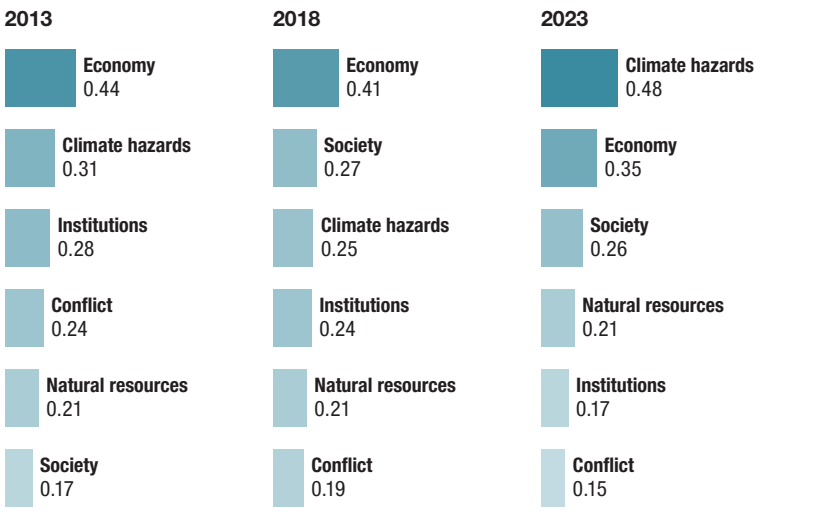
Figure 13.4 shows the trends in risk resilience across domains over the past decade. Resilience to institutional and conflict risks have decreased over this period (levels of 0.20 and below), driving an overall weaker resilience.

FIGURE 13.3 Risk vulnerability ranked by domain, Sudan



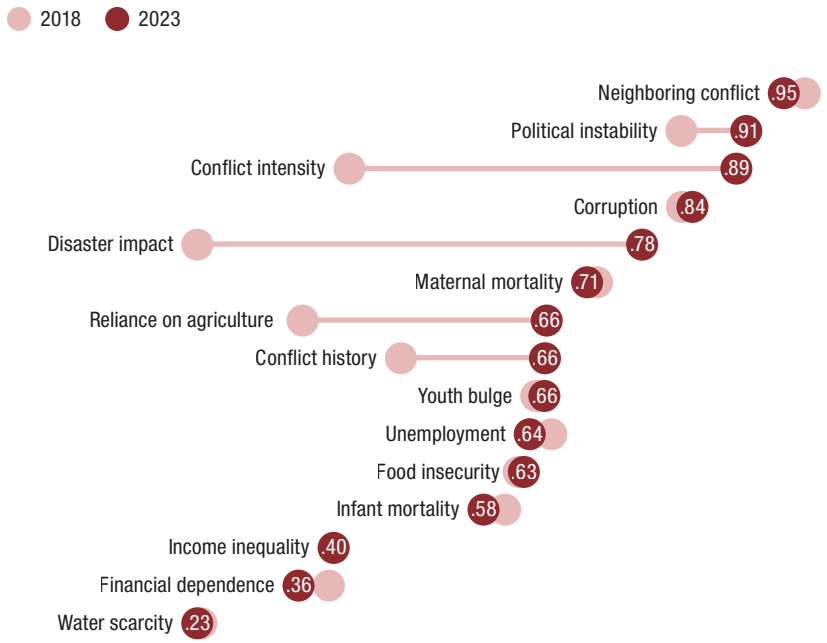
Source: Authors, based on UNESCWA (2025).

FIGURE 13.4 Risk resilience ranked by domain, Sudan



Source: Authors, based on UNESCWA (2025).

FIGURE 13.5 Drivers of vulnerability, Sudan, 2018 and 2023

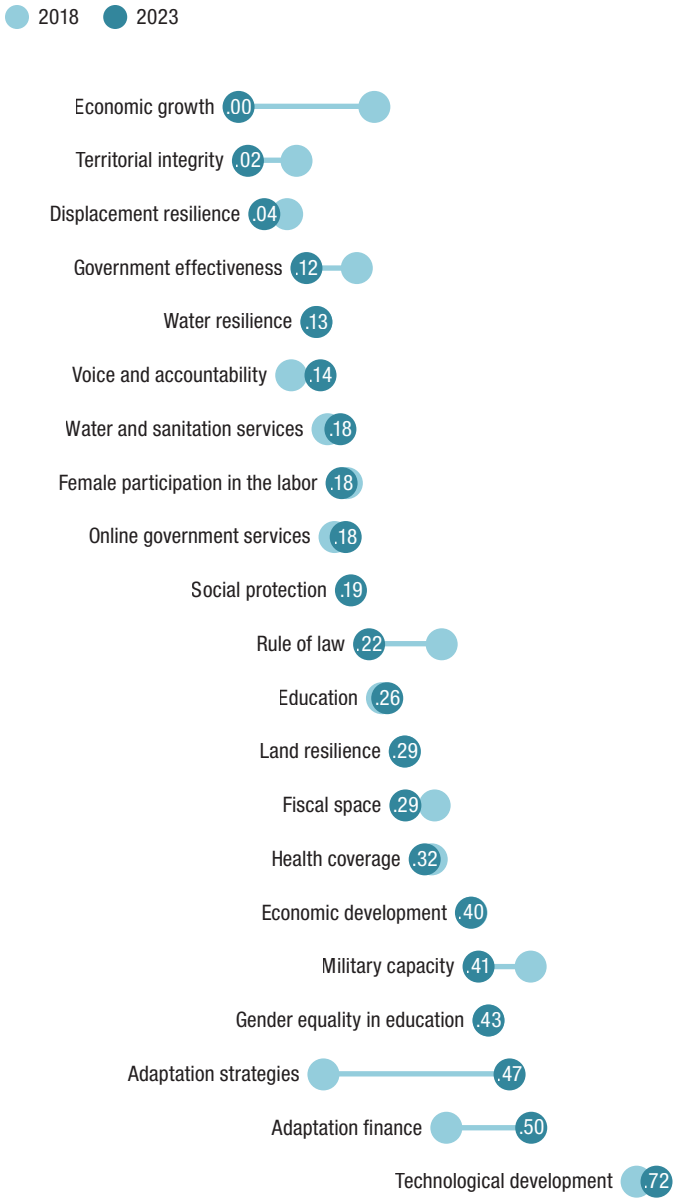


Source: Authors, based on UNESCWA (2025).

Figures 13.5 and 13.6 compare the drivers of risk (from highest to lowest risk) between 2018 and 2023. Figure 13.5 shows a significant increase in vulnerability for the categories of conflict intensity, conflict history, disaster impact, reliance on agriculture, and political instability, with little to no improvement in other drivers of vulnerability. For 2023, only 4 of 15 drivers of vulnerability are ranked at medium risk or less, and 4 drivers are ranked at the highest risk level (above 0.80).

Figure 13.6 shows the drivers of resilience ranked from lowest (higher risk) to highest (lower risk) resilience. Risk drivers under the institutional domain, namely rule of law and government effectiveness, have experienced the most notable deterioration, while drivers of risk under the climate hazards domain, namely adaptation strategies and adaptation finance, have undergone notable improvements in resilience. With the collapse of the economy, drivers of resilience have deteriorated; most notable are economic growth, which records the lowest possible score of zero, and fiscal space.

FIGURE 13.6 Drivers of resilience, Sudan, 2018 and 2023



Source: Authors, based on UNESCWA (2025).

Sudan: Conflict risk

Sudan's conflict pathway is characterized by violent clashes, interethnic disputes, and regional spillovers. More than 30,000 conflict-related fatalities have been recorded since April 2023 (ACLED 2025), and more than 10 million people have been displaced (UNHCR 2025), leading to the largest internal displacement crisis worldwide. Both conflict vulnerability and resilience have deteriorated over the past decade (Table 13.2).

TABLE 13.2 Conflict risk, Sudan

Pathway	Domain	Vulnerability	Resilience	Overall Score
Conflict	Conflict	Very High	Very Low	Severe

Source: Authors, based on UNESCWA (2025).

Figure 13.7 presents the relationship between conflict risk vulnerability and resilience of the 22 Arab countries. Each circle represents an Arab country, with the size of the circle denoting the population size relative to the region.

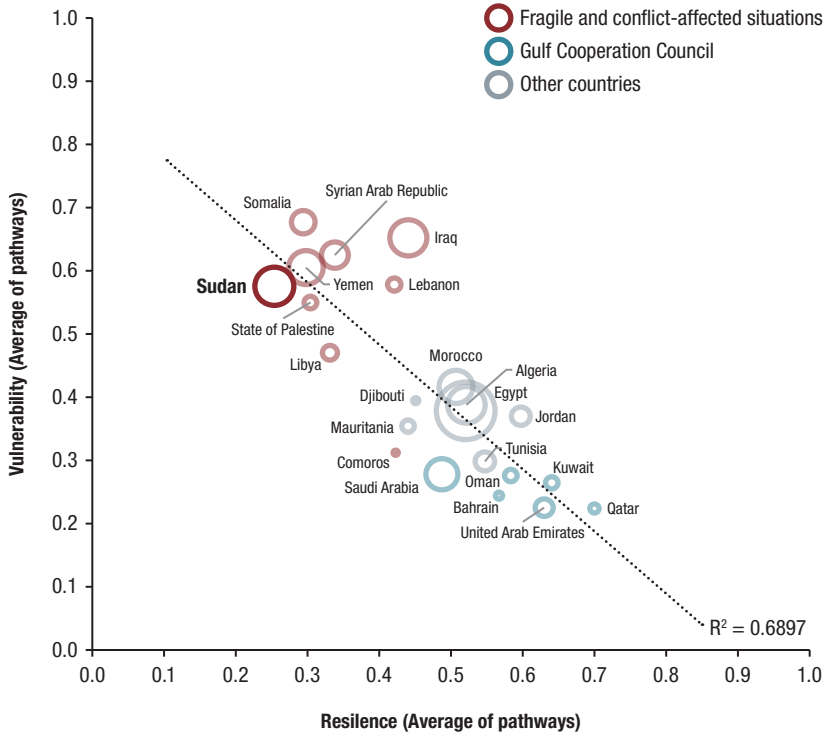
The figure shows that countries with high vulnerability also tend to have low resilience to risks. Countries in the Gulf Cooperation Council are relatively high in resilience and low in vulnerability, while countries in the fragile and conflict-affected situations category are low in resilience and high in vulnerability.

Compared to other Arab countries, Sudan has one of the highest levels of vulnerability and lowest levels of resilience for 2023, with risks that are the same as or similar to other conflict-affected countries in the region, including Palestine, Somalia, Syria, and Yemen.

As shown in Table 13.3, most of the drivers of conflict risk are at high levels (that is, high vulnerability or low resilience) and have generally deteriorated over the past decade. Most notably, conflict-related risks have escalated to dangerous levels over the past five years, including both internal conflict and conflict in neighboring countries (Figure 13.8). Drivers of resilience are also at very high levels (0.20 or below), apart from military capacity, though even this driver has deteriorated significantly over the past decade.

The struggle between the SAF and RSF has triggered additional violence among ethnic militias and armed groups, further fragmenting the security landscape and leading to a deterioration of already low territorial integrity. Political instability has worsened, with no effective governance or ceasefire agreements in sight. Neighboring conflicts in Chad, Ethiopia, and South Sudan are exacerbating cross-border violence (UNOCHA 2024).

FIGURE 13.7 Conflict vulnerability and resilience, Sudan, 2023



Source: Authors, based on UNESCWA (2025).

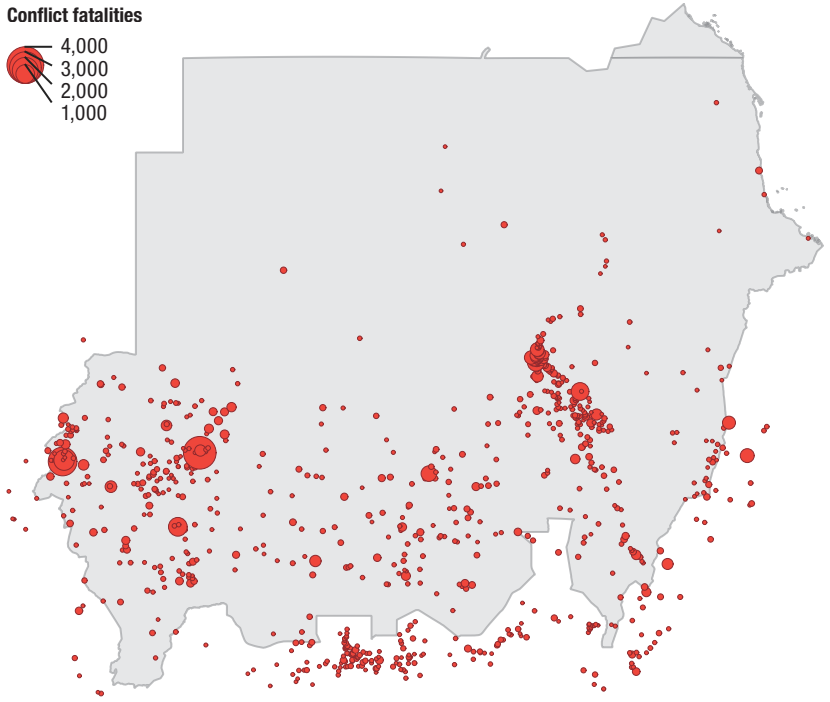
TABLE 13.3 Drivers of vulnerability and resilience for conflict risk, Sudan

Risk Levels: Very High | High | Medium | Low | Very Low

	Driver	2013	2018	2023	Trend
Vulnerability	Conflict intensity	0.77	0.42	0.89	
	Conflict history	0.73	0.48	0.66	
	Political instability	0.87	0.83	0.91	
	Neighboring conflict	0.95	0.98	0.95	
Resilience	Territorial integrity	0.06	0.10	0.02	
	Displacement resilience	0.09	0.08	0.04	
	Voice and accountability	0.10	0.09	0.14	
	Military capacity	0.73	0.50	0.41	

Source: Authors, based on UNESCWA (2025).

FIGURE 13.8 Conflict fatalities in Sudan and near Sudan (within 100 km), 2020–2024



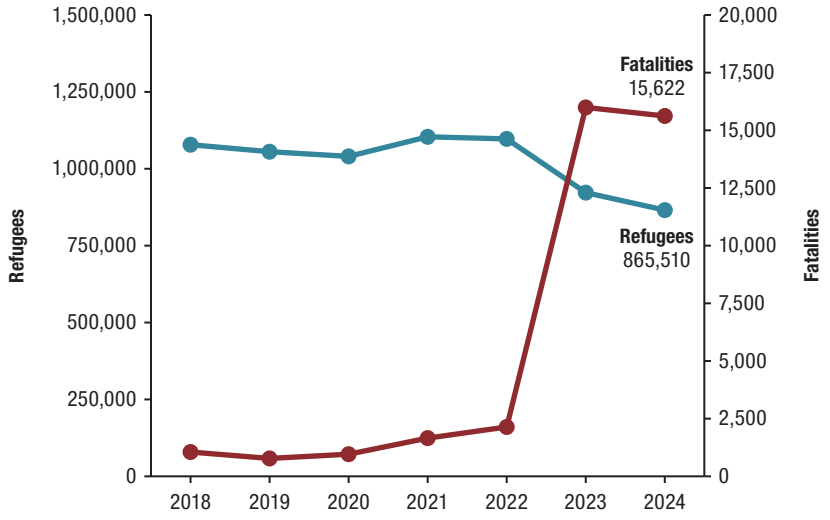
Source: Authors, based on ACLED (2025).

As shown in Figure 13.9, conflict-related fatalities have significantly increased over the past two years to total more than 30,000 deaths since the outbreak of conflict in 2023 (UNHCR 2025; ACLED 2025).

The number of refugees leaving the country has slightly decreased but remains high, at around 1 million people per year since 2018, as shown in Figure 13.10 (UNOCHA 2024; IDMC 2025).

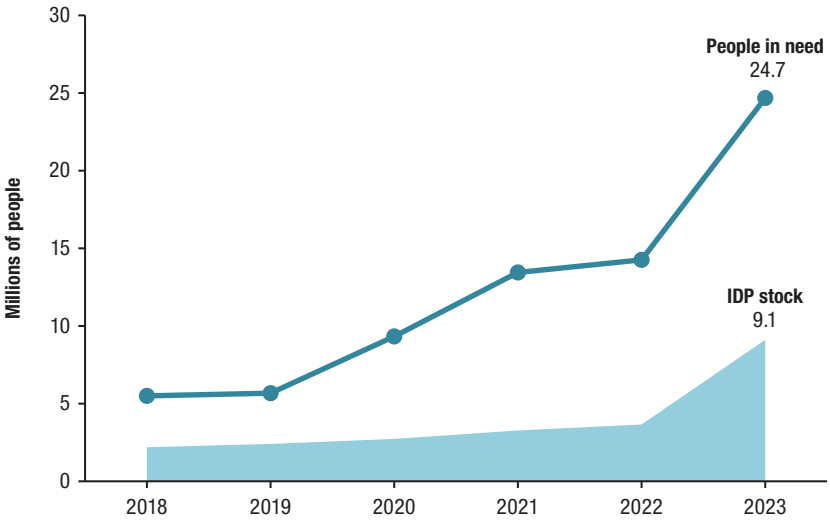
The slight decline in the number of refugees can be attributed to an increase in conflict in neighboring countries and a decrease in the number of people who can mobilize resources to leave the country. These factors may also explain why the number of internally displaced persons has quadrupled over the past five years and surged since the beginning of the conflict in 2023 (IDMC 2025). The combination of conflict and the deteriorating economy has also contributed to a rapid rise in the number of people in need of humanitarian assistance, who now constitute more than half of the entire country's

FIGURE 13.9 Conflict fatalities and refugees, Sudan, 2018–2024



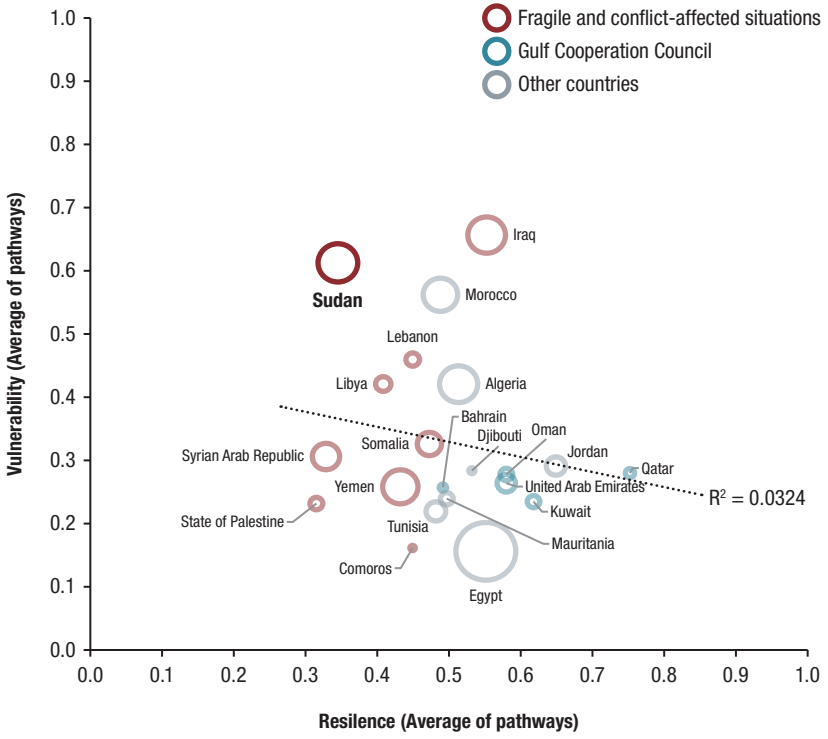
Source: Authors, based on UNHCR (2025) and ACLED (2025).

FIGURE 13.10 People in need and internally displaced people, Sudan, 2018–2023



Source: Authors, based on UNOCHA (2024) and IDMC (2025).

FIGURE 13.11 Climate vulnerability and resilience in various countries, 2023



Source: Authors, based on UNESCWA (2025).

population (UNOCHA 2024; IDMC 2025). Unfortunately, the continued fragmentation of Sudan's security landscape indicates that conflict is likely to persist, exacerbating political instability and humanitarian suffering.

Sudan: Climate and natural resource risks

Sudan is one of the most climate-vulnerable nations globally, with frequent floods, droughts, and rising temperatures worsening food insecurity and displacement (Figure 13.11 and Table 13.4). The combination of extreme climate events and conflict-driven displacement has created a dual crisis, straining Sudan's ability to adapt. Unless climate adaptation strategies are implemented, millions will remain at risk of food and water shortages.

TABLE 13.4 Climate risk

Pathway	Domain	Vulnerability	Resilience	Overall Score
Climate	Natural Resource	Medium	Low	Significant
	Climate Hazards	High	Medium	Significant

Source: Authors, based on UNESCWA (2025).

Both domains for the climate risk pathway—natural resources and climate hazards—are at significant risk levels. Sudan's vulnerability to climate risk is among the highest in the Arab region, second only to Iraq, and resilience is the third lowest in the region after Palestine and Syria.

Natural resources

The combination of conflict and climate change has stressed the country's already vulnerable water and land resources. Desertification is reducing available farmland, triggering land disputes and conflict. Sudan's vulnerable population is more heavily reliant on agriculture, and the decline in crop yields in 2024 has exacerbated the already worsening food security.

TABLE 13.5 Drivers of vulnerability and resilience for natural resources risk, 2013–2023

Risk Levels: Very High | High | Medium | Low | Very Low

	Driver	2013	2018	2023	Trend
Vulnerability	Reliance on agriculture	0.71	0.64	0.34	
	Water scarcity	0.75	0.76	0.77	
Resilience	Water resilience	0.13	0.13	0.13	
	Land resilience	0.29	0.29	0.29	

Source: Authors, based on UNESCWA (2025).

Climate hazards

In addition to conflict vulnerabilities, Sudan is exposed to myriad climate change impacts, including drought and flooding, which are likely to increase in both frequency and intensity in the coming decades.

As of October 2024, UN experts warned that the country was facing one of the "worst famines in decades," adding that the beginning of the rainy season and associated flooding in eastern and northern Sudan was exacerbating the challenge by damaging agriculture and livestock losses, as well as negatively impacting water quality (OHCHR 2024). Regions such as Darfur have long suffered from intensifying drought conditions (UNEP 2021). Areas exposed to drought are also particularly vulnerable

TABLE 13.6 Drivers of vulnerability and resilience for climate hazards risk, Sudan

Risk Levels:	Very High	High	Medium	Low	Very Low

	Driver	2013	2018	2023	Trend
Vulnerability	Disaster impact	0.27	0.23	0.78	
Resilience	Adaptation strategies		0.15	0.47	
	Adaptation finance	0.31	0.36	0.50	

Source: Authors, based on UNESCWA (2025).

to flooding when heavy rains do occur, as the ground is too dry to absorb excessive rainfall.

According to climate projections from the Regional Initiative for the Assessment of Climate Change Impacts on Water Resources and Socio-Economic Vulnerability in the Arab Region (RICCAR), by as early as 2025, Sudan's mean temperate may increase by 1.1 degrees Celsius compared to the reference period (1981–2000). On average, the country's mean temperature has increased by more than 0.07 degrees Celsius per decade, as shown in Figure 13.12.

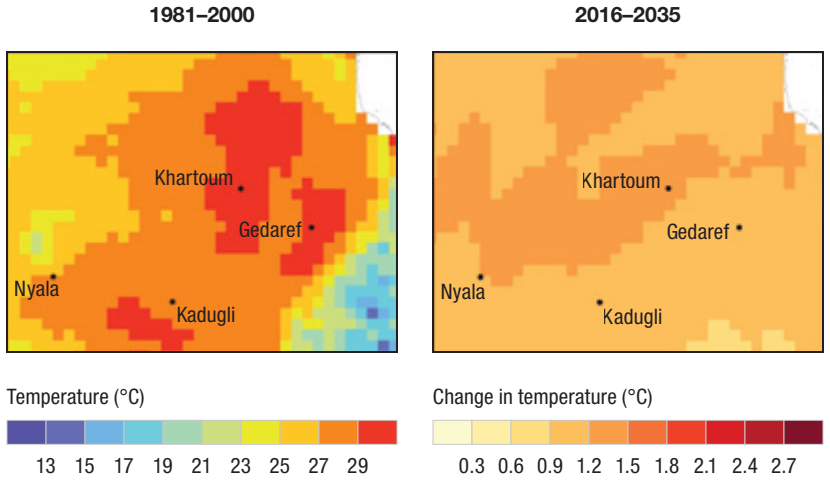
With respect to precipitation, RICCAR projections are more variable (Figure 13.13). In the Blue Nile Basin area, precipitation is generally decreasing, while in the Sahara, rainfall will become more sporadic. Combined, these projections indicate that drought conditions are likely to worsen in the northern Sahara, while the Sahel will be affected by elevated flood risks.

Sudan: Development risks

Sudan's economic collapse is accelerating, with hyperinflation, skyrocketing food prices, and mass unemployment driving severe financial instability. The country's institutions have collapsed, leaving millions without access to education, healthcare, or legal protections. Moreover, Sudan's social fabric has been severely weakened, with high levels of displacement, gender-based violence, and collapsing public services. Institutions lack the capacity to enforce rule of law, deliver essential services, or coordinate humanitarian efforts.

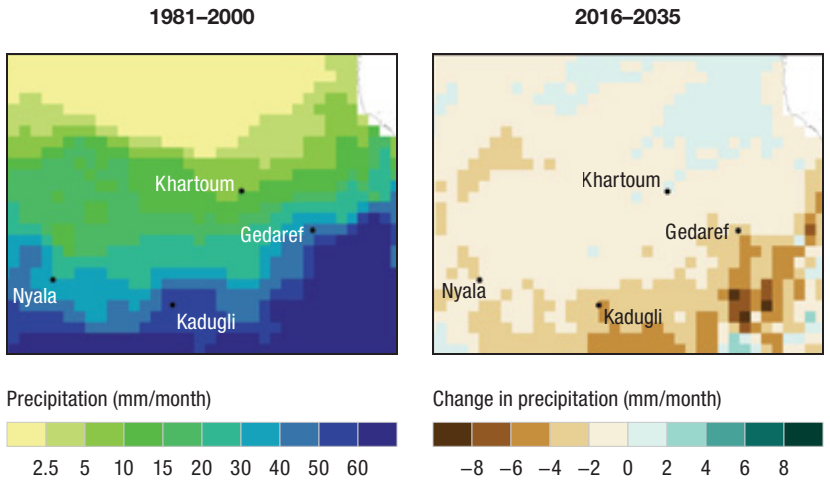
Thus, Sudan faces significant risks in all three development risk pathways (economy, society, and institutions) (Table 13.7). Regionally, the country's development risk vulnerability is one of the highest and resilience one of the lowest, marginally surpassed only by conflict-entrenched Arab states (Figure 13.14).

FIGURE 13.12 Mean change in temperature by 2025 (2016–2035) compared to the reference period (1981–2000), RCP 8.5, Sudan



Source: Authors, based on RICCAR (2025).

FIGURE 13.13 Mean change in precipitation by 2025 (2016–2035) compared to the reference period (1981–2000), RCP 8.5, Sudan



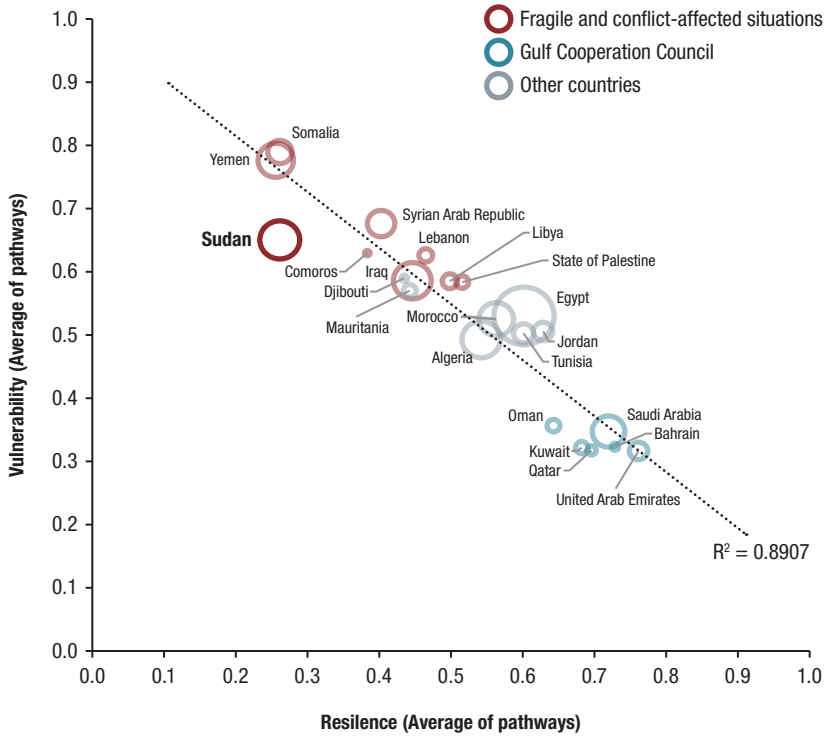
Source: Authors, based on RICCAR (2025).

TABLE 13.7 Development risk, Sudan

Pathway	Domain	Vulnerability	Resilience	Overall Score
Development	Economy	Medium	Low	Significant
	Society	High	Low	Significant
	Institutions	Very High	Very Low	Severe

Source: Authors, based on UNESCWA (2025).

FIGURE 13.14 Development vulnerability and resilience, various countries, 2023



Source: Authors, based on UNESCWA (2025).

Economic risks

Sudan's economic collapse is one of the worst in the Arab region, with hyperinflation, rising poverty, and failing public services.

Economic vulnerability is primarily driven by food insecurity. However, due to the lack of data from Sudan's government and reputable international sources, the true extent of food insecurity, which is rapidly accelerating toward

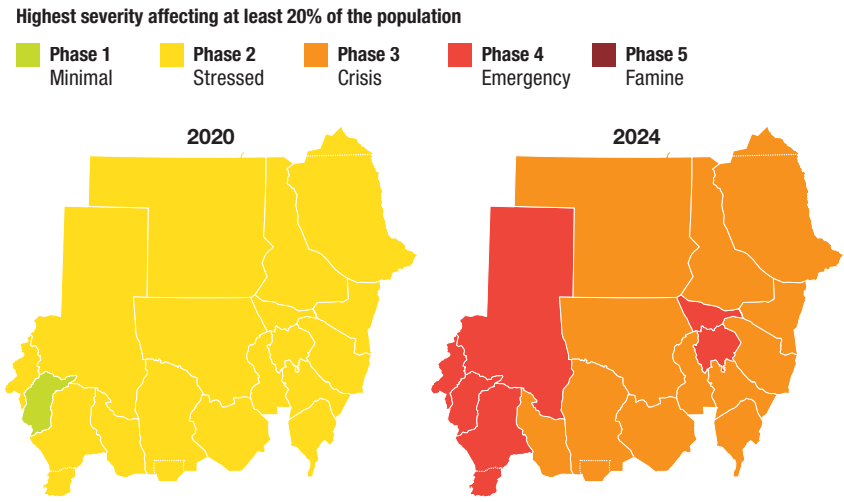
TABLE 13.8 Drivers of vulnerability and resilience for economic risk, Sudan

Risk Levels: Very High | High | Medium | Low | Very Low

	Driver	2013	2018	2023	Trend
Vulnerability	Financial dependence	0.42	0.39	0.36	
	Food insecurity	0.70	0.63	0.63	
	Income inequality	0.40	0.40	0.40	
Resilience	Economic development	0.47	0.40	0.40	
	Economic growth	0.34	0.23	0.00	
	Fiscal space	0.50	0.34	0.29	
	Technological development		0.68	0.72	

Source: Authors, based on UNESCWA (2025).

FIGURE 13.15 Acute food insecurity, Sudan, 2020 and 2024

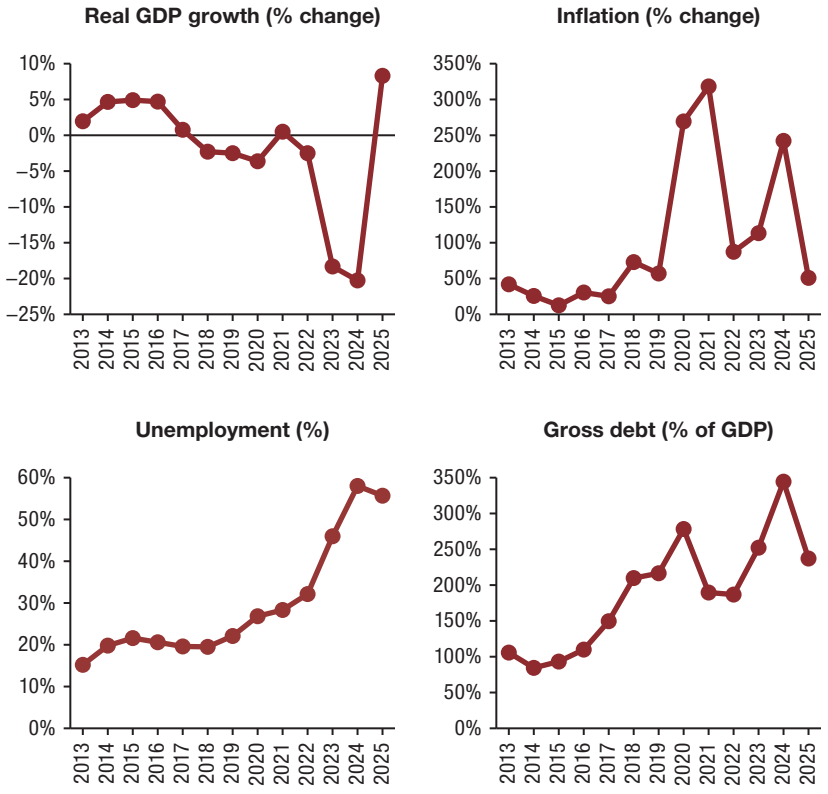


Source: Authors, based on IPC (2024).

a full famine, is examined through data and projections from the Integrated Food Security Phase Classification.

Over the past five years, acute food insecurity increased from phase 2 (stressed) in most of the country to phase 3 (crisis) or higher in all 17 states, as shown in Figure 13.15. With conflict and climate crises underpinned by overstressed natural resources and a lack of institutions, food insecurity is projected to increase further.

FIGURE 13.16 Real GDP growth and inflation, Sudan, 2013–2025



Source: Authors, based on IMF (2025).

Sudan's economy is on a steep downward trajectory, with gross domestic product (GDP) contracting by 20 percent in 2024 and an additional 8.3 percent decline expected in 2025 (Figure 13.12). The Sudanese pound has lost more than 200 percent of its value, leading inflation to surpass 242 percent in 2024 and making food and basic goods unaffordable, especially given that more than 58 percent of the working population is unemployed.

Risks to society

Sudan's social risk domain is driven by high levels of vulnerability in employment and health, as well as low levels of resilience in basic services, including education, water and sanitation, and social protection (Table 13.9).

TABLE 13.9 Drivers of vulnerability and resilience for social risk, Sudan, 2013–2023

Risk Levels: Very High | High | Medium | Low | Very Low

	Driver	2013	2018	2023	Trend
Vulnerability	Unemployment	0.74	0.67	0.64	
	Youth bulge	0.63	0.65	0.66	
	Infant mortality	0.64	0.61	0.58	
	Maternal mortality	0.74	0.72	0.71	
Resilience	Education	0.22	0.25	0.26	
	Social protection			0.19	
	Water and sanitation services	0.11	0.15	0.18	
	Health coverage		0.33	0.32	
	Gender equality in education	0.17	0.43	0.43	
	Female participation in labor	0.18	0.19	0.18	

Source: Authors, based on UNESCWA (2025).

While both infant and maternal mortality have slightly decreased over the past decade, weak governance, food insecurity, and the collapse of public infrastructure such as hospitals will likely have significant negative impacts. High unemployment, combined with a large youth bulge and ongoing conflict, is also leading to further destabilization through even higher risks of conflict and political violence.

Risks to institutions

The conflict has caused major disruptions to basic service delivery, which have been further compounded by the collapse of public institutions. Institutional vulnerability and risk are being exacerbated through the fragmentation of public institutions and their human resources.

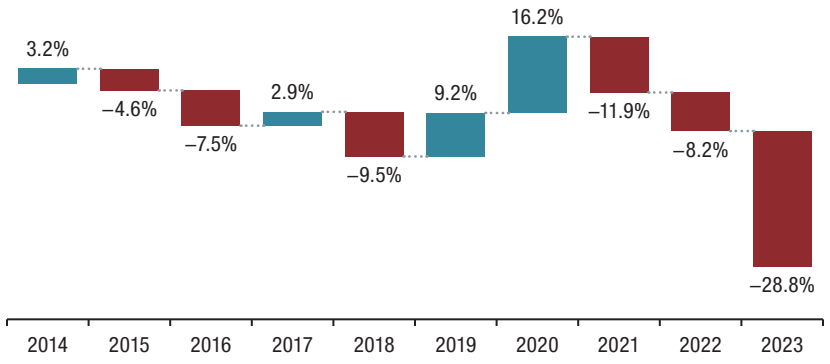
TABLE 13.10 Drivers of vulnerability and resilience for institutional risk, Sudan, 2013–2023

Risk Levels: Very High | High | Medium | Low | Very Low

	Driver	2013	2018	2023	Trend
Vulnerability	Corruption	0.84	0.83	0.84	
Resilience	Rule of law	0.32	0.35	0.22	
	Government effectiveness	0.24	0.20	0.12	
	Online government services	0.29	0.16	0.18	

Source: Authors, based on UNESCWA (2025).

FIGURE 13.17 Changes in institutional resilience, Sudan, 2013–2023



Source: Authors, based on UNESCWA (2025).

Corruption remains unchecked, further weakening public institutions. The steep decline in institutional resilience is notable through the marked deterioration of the rule of law, as well as government effectiveness, which fell significantly in 2023.

Conclusion and policy recommendations: Strengthening drivers of resilience in Sudan

The interconnected crises of conflict, economic failure, climate shocks, and governance collapse are driving Sudan toward a protracted humanitarian catastrophe. With the ongoing warfare between the SAF and RSF, increased violence in Darfur, and regional spillovers, this escalation in conflict poses an immediate threat to many lives. Climate vulnerability, including severe flooding, drought, and desertification, reduces food and water security. Largely due to these factors, Sudan's economic situation is grim, with steep declines in GDP, hyperinflation, and soaring unemployment. Weak governance is reflected in the country's institutional collapse, which has led to a breakdown in law, service delivery, and social protection, and has greatly limited options for improvement.

These overlapping crises of conflict, economic collapse, and climate shocks have eroded state capacity and left millions highly vulnerable. Addressing these challenges requires a multidimensional approach to tackle the conflict, climate, and development pathways simultaneously, while also prioritizing

resilience-building at every level to reduce the humanitarian crisis and build national peace assets.

First, political will must be matched with targeted interventions that strengthen resilience. National, regional, and international actors should commit to risk-informed strategies that not only respond to immediate humanitarian needs but also address the structural drivers of fragility, such as weak governance, deteriorating institutions, and reliance on climate-stressed agriculture.

Second, operationalizing the humanitarian-development-peace nexus is essential. Efforts should go beyond parallel interventions to focus on integrated action around shared priorities: protecting livelihoods, expanding access to basic services, and enhancing social cohesion. Coordinated programming can reduce duplication, increase efficiency, and amplify impact, particularly in highly vulnerable areas affected by displacement and food insecurity.

Third, resilience-building should be mainstreamed across all actors at the local, national, regional, and multilateral levels. Local institutions, civil society, and community organizations must be empowered as frontline partners, while international and multilateral agencies align their investments to reinforce, rather than substitute, local capacity.

Finally, strengthening peacebuilding assets is critical. Inclusive governance, rule of law, and equitable access to resources should be prioritized as foundations for sustainable recovery. Integrating climate adaptation and conflict prevention into development planning can help mitigate future risks while creating pathways for long-term stability.

In sum, Sudan requires a comprehensive, coordinated, and resilience-centered strategy that bridges humanitarian relief with development and peacebuilding. Without such an approach, the cycle of crisis and fragility will deepen, undermining prospects for recovery and stability.

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