Chapter 7

ECONOMYWIDE IMPACT OF SUDAN'S CONFLICT AND PATHWAYS TO RECOVERY

Khalid Siddig, Zuhal Elnour, and James Thurlow

Massive human displacement and economic devastation have resulted from Sudan's ongoing conflict, which erupted on April 15, 2023, between the Sudanese Armed Forces (SAF) and the Rapid Support Forces (RSF). According to the United Nations High Commissioner for Refugees, as of February 2, 2026, nearly 12 million people were internally displaced in Sudan, and 4.5 million had sought refuge in neighboring countries (UNHCR 2026). Public services, including health, education, and sanitation, have collapsed in many regions, compounding the humanitarian crisis and further destabilizing the socioeconomic fabric of the country.

The conflict has also devastated Sudan's industrial base, particularly in Khartoum and surrounding areas, where entire industrial zones have been looted, destroyed, or rendered inoperable. Survey evidence from agrifood processing firms indicates widespread closures, labor disruptions, and a collapse in supply chains, with more than 90 percent of firms halting operations in the early months of the conflict (Kirui, Siddig, et al. 2023a; 2023b). Educational and health facilities have been systematically damaged or occupied by armed groups, leading to prolonged closures and denying essential services to millions.

In addition, agricultural production has been severely disrupted. Evidence from a nationwide survey of smallholder farmers reveals that insecurity, input shortages, and market access constraints have sharply reduced farming activity and yields across nearly all states in Sudan (Kirui, Siddig, Ahmed, et al. 2023). This destruction has not only deepened the immediate humanitarian crisis but also severely undermined Sudan's long-term development prospects.

Urban populations have also experienced severe socioeconomic distress. Evidence from a national household survey documents rising unemployment, collapsing consumption, and growing food insecurity among urban households, driven by displacement, declining incomes, and disruption of public services (IFPRI and UNDP 2024a; 2024b).

Projections by major international financial institutions point to severe contractions in Sudan's gross domestic product (GDP) (Siddig and Basheer 2024). In October 2023, the International Monetary Fund (IMF) projected that Sudan's GDP would shrink by 18 percent in 2023, with a modest recovery of 0.6 percent anticipated in 2024 (IMF 2023a). However, by October 2024, the IMF revised its projections, estimating a sharper decline of 20 percent in 2024 (IMF 2023b). Similarly, the World Bank's late 2023 forecast anticipated a 12 percent contraction in 2023 and a further 3.7 percent decrease in 2024 (World Bank 2023). Their revised estimates of October 2024 were even more alarming, projecting GDP declines of 20 percent in 2023 and 15 percent in 2024 (World Bank 2024).

Other assessments indicated even steeper losses, suggesting GDP contractions of more than 29 percent (Sudan, CBoS 2024) and 46 percent in 2023 (Ahmed et al. 2026; Siddig et al. 2023). Reinforcing these grim assessments, Sudan's Minister of Finance reported in November 2023 that the war had resulted in economic losses exceeding US$26 billion, more than half of the nation's total GDP in 2022 (Sudan Akhbar 2023).

While existing estimates highlight the immediate macroeconomic costs of violent conflict (Ahmed et al. 2026), the longer-term effects on livelihoods, poverty, and development remain less understood. For example, de Groot and colleagues (2022) estimated that, in the absence of violent conflict since 1970, global GDP in 2014 would have been 12 percent higher on average, underscoring the enduring economic burdens that civil wars impose by eroding the so-called "peace dividend." Although Sudan has endured repeated cycles of violent conflict, economywide analyses of their impacts are almost nonexistent. This scarcity of research highlights a critical gap, which the present study begins to address through a comprehensive, data-driven assessment.

Data limitations pose a significant challenge for economic analysis in Sudan. Official statistics are frequently outdated, incomplete, or inconsistent, reflecting structural weaknesses in the national statistical system (World Bank 2021; UNDP 2019; IMF 2020). These shortcomings are intensified in contexts of conflict and fragility, where data collection is disrupted and much economic activity shifts into informal channels (Jerven 2013). Sudan's long civil war, which culminated in South Sudan's secession, and recurrent violence in Darfur have undermined growth, weakened markets, and eroded state capacity (World Bank 2009; World Bank 2025). In addition, years of international sanctions, the extensive involvement of military and paramilitary actors in commercial life, and the persistence of entrenched institutions have further

limited transparency and the reliability of official statistics. Remittances illustrate these difficulties well: although they provide a vital source of household income and foreign exchange, much of this flow bypasses formal systems and remains poorly measured. Taken together, these historical and structural factors form the context for the analysis presented in this chapter.

Given these constraints on Sudan's statistical system, the quality and consistency of available data remain limited, with challenges likely affecting all sectors of the economy. Consequently, while the model is well suited to capture broad economywide trends and trade-offs, sector-specific results should be interpreted with caution, since variations in data quality may influence the robustness of scenario outcomes. To mitigate these limitations, we cross-checked our sources and designed the scenarios to reflect a wide range of possible outcomes.

In this context, understanding the economywide impact of the ongoing conflict and potential recovery pathways is critical for guiding policy responses. As emphasized by Siddig and Basheer (2024), the lack of comprehensive, data-driven analysis hampers efforts to design effective responses to Sudan's crisis. Rigorous economic assessments are essential to inform the design of humanitarian and development strategies, both during and after conflict.

This chapter applies a dynamic computable general equilibrium (CGE) model, the Rural Investment and Policy Analysis (RIAPA) model, to quantify the economic costs of the conflict and assess the effectiveness of various intervention scenarios. The findings build on a growing body of evidence on the conflict's impact on food systems, household welfare, and macroeconomic stability. Notable recent contributions include projections of agricultural losses, conflict-induced poverty dynamics, and analysis using satellite data (Siddig et al. 2024; IFPRI and UNDP 2024a; 2024b; Guo et al. 2024; Siddig et al. 2023). The chapter is structured as follows: the second section outlines the analytical framework, including the design of simulation scenarios and data sources. The third section presents, discusses, and analyzes the results from the conflict and recovery scenarios. The final section concludes with reflections on Sudan's future trajectory and the policy implications of the findings.

Description of modeling approach and scenario design

We apply an integrated economywide modeling approach to assess the socioeconomic impacts of Sudan's conflict and explore potential recovery pathways

through 2030. Our analysis focuses on three main objectives: (1) quantifying the economic impacts of the conflict, (2) evaluating different recovery strategies, and (3) examining how these interventions affect the economy, poverty, inequality, and undernourishment.

Modeling framework

For this analysis, we used the RIAPA model developed by IFPRI. RIAPA is a single-country, recursive dynamic CGE model tailored to evaluate the economywide impacts of public investments and policies on inclusive and sustainable growth (Thurlow 2008). It is based on the standard CGE modeling approach but adds dynamic features that allow for the simulation of medium- to long-term structural change.

Similar to other CGE models, RIAPA tracks the interlinkages between sectors, labor markets, households, and the government. Producers are assumed to maximize profits based on nested production technologies and available production factors, while consumers maximize utility based on income and preferences. The model allows for endogenous adjustments in wages and commodity prices to equilibrate factor and product markets.

One of the model's key strengths is its ability to link macroeconomic results to micro-level household outcomes, such as poverty and nutrition, through microsimulation modules. These modules are based on nationally representative household survey data. The model's integration with IFPRI's Nexus Social Accounting Matrix (SAM) database enables detailed disaggregation of agricultural and food systems, providing rich insight into sectoral impacts and spillovers (IFPRI 2024; Siddig et al. 2024).

RIAPA offers three distinctive advantages that make it particularly valuable for analyzing the economywide impacts of policies, investments, and external shocks. First, the model provides a detailed representation of the agrifood system and its linkages to the economy within the Nexus SAMs. It enables the assessment of direct and spillover effects across sectors and interaction with the domestic economy and global markets. Second, RIAPA identifies and navigates trade-offs associated with different policy and investment choices, recognizing that interventions often produce uneven outcomes across sectors and population groups. By incorporating structural differences between industries and patterns of household engagement, the model highlights how competition over scarce resources and varying sectoral characteristics can create winners and losers. Finally, RIAPA links macroeconomic outcomes to household-level impacts through integrated microsimulation modules, offering insights into poverty changes and diet quality.

Data sources

RIAPA is calibrated to the 2021 Nexus SAM for Sudan (IFPRI 2024). This SAM provides a comprehensive economywide database that captures production, trade, and income flows across approximately 55 sectors of the Sudanese economy. It also includes detailed disaggregation of households, labor, and agrifood systems, offering a robust foundation for economywide analysis relevant to policy and investment planning.

In defining the baseline simulation, key macroeconomic data, including GDP contraction estimates for 2023–2025, are drawn from the most recent IMF projections. Total factor productivity (TFP) growth in various sectors is adjusted so that overall GDP growth equals the target values. Additional behavioral and distributional insights are drawn from recent household-, farmer-, and firm-level surveys. These include the 2023/24 Rural Household Survey (IFPRI and UNDP 2024a), 2024 Urban Household Survey (IFPRI and UNDP 2024b), 2023 Farmers' Survey (Kirui, Siddig, Ahmed, et al. 2023), and 2023 Agro-industry Survey (Resnick et al. 2025; Kirui, Siddig, et al. 2023a), which together provide a detailed picture of the evolving socioeconomic landscape, consumption dynamics, coping strategies, and business constraints in Sudan amid conflict. Nevertheless, given Sudan's rapidly evolving crisis, conditions may have deteriorated further by the time of publication, and the results presented here may therefore differ from future outcomes.

Scenario design

We simulate six scenarios grouped into three categories to reflect Sudan's changing context and possible recovery pathways. These include a counterfactual preconflict baseline, a conflict scenario, and four intervention simulations. Table 7.1 summarizes key assumptions, while the accompanying text elaborates on the logic and parameters used.

PRECONFLICT (BASE) SCENARIO

This scenario projects Sudan's economic trajectory as if the 2023 conflict had not occurred. It assumes continued economic trends from 2022 and serves as a reference point to estimate the cost of the conflict and assess the potential of recovery interventions.

CONFLICT SCENARIO

This scenario reflects the ongoing conflict and its economic disruption. It incorporates revised GDP growth estimates provided by the IMF: −18.3 percent for 2023, −20 percent for 2024, and −10 percent for 2025. The 10 percent

TABLE 7.1 Summary of key scenario assumptions

Scenario	GDP Growth	Agricultural TFP	Foreign Inflows	Intervention Focus
Preconflict (Baseline)	IMF 2023 + WB trends	Maintained at preconflict levels	None	Continuation of preconflict trajectory
Conflict	IMF 2024 (–18.3%, –20%, –10%)	Declines with GDP	None	Reflects prolonged conflict
Agricultural Recovery	Same as Conflict	Recovers to 2022 level by 2028	None	Agricultural productivity
Working Capital	Same as Conflict	Same as Agricultural Recovery	+US$1B in foreign savings	Investment boost to private sector
Cash Transfers	Same as Conflict	Same as Agricultural Recovery	+US$1B in remittances	Household-level income support
Combined Scenario	Same as Conflict	Same as Agricultural Recovery	+US$750M foreign savings, +US$250M remittances	Mix of capital and cash transfers

Source: Authors.

Note: GDP = gross domestic product; IMF = International Monetary Fund; TFP = total factor productivity; WB = World Bank. All recovery interventions assume disbursement begins in 2026 and build on the conflict scenario trajectory through 2025.

contraction in GDP in 2025 assumes that the conflict persists through the end of 2025, resulting in widespread economic, sectoral, and welfare losses. It assumes the continuation of conflict-related disruption through 2025, resulting in significant economic, sectoral, and welfare losses.

Starting in 2026, four alternative recovery interventions simulate the impact of injecting US$1 billion (approximately 3.3 percent of 2022 GDP) into the economy. Each follows the conflict scenario trajectory until 2025, after which interventions diverge in design and focus.

AGRICULTURAL RECOVERY SCENARIO

This focuses on reviving agricultural TFP to its preconflict (2022) levels by 2028.

WORKING CAPITAL INJECTION SCENARIO

The scenario assumes the full US$1 billion is directed to support investment and capital flows to the private sector to stimulate economic activity, in addition to reviving the agriculture sector. The total amount is dispersed as follows: 20 percent is allocated in 2026, 40 percent in 2027, and 40 percent in 2028. It assumes an additional US$1 billion in foreign savings.

CASH TRANSFER SCENARIO

This scenario distributes US$1 billion as targeted cash assistance to vulnerable households, aiming to alleviate poverty and food insecurity in addition to

reviving the agriculture sector. Half of the total amount of US$1 billion is dispersed in 2026 and the other half in 2027. It assumes a US$1 billion increase in remittances.

COMBINED SCENARIO

This integrates the three previous interventions—agriculture, working capital, and cash transfers—by allocating US$1 billion across working capital and cash transfers to explore synergies and trade-offs. The total amount of US$1 billion is dispersed as follows: 25 percent is allocated to cash transfers, and 75 percent is allocated to working capital. Both the amounts allocated to cash transfers and working capital are dispersed across the years following the approach used in each scenario.

The four simulated interventions described above are designed to represent the impact of mobilizing US$1 billion in external support—not as a full reconstruction package, but as a prioritization exercise within a broader recovery framework. Total reconstruction needs are expected to reach up to US$200 billion, with more than 60 percent of the country's infrastructure being damaged (Fathi 2025), underscoring the scale of effort required beyond the initial recovery phase.

Results and discussion

This section presents the core findings of the economywide modeling exercise. It is organized into two main components. First, we present the macroeconomic and welfare effects of the ongoing conflict relative to a preconflict baseline, highlighting the extent of economic contraction, sectoral collapse, rising poverty, food insecurity, and consumption losses. These results are crucial to understanding the depth of the crisis and the scale of the challenge facing recovery efforts. Next, we explore the potential mitigation effects of key interventions, including agricultural revitalization, infrastructure investment, and social protection, relative to a continued conflict scenario. This allows for an assessment of the relative contribution of targeted interventions within a constrained fiscal and institutional context.

Economic impact of the conflict relative to the preconflict baseline

This section presents the economywide impacts of the conflict scenario compared to a counterfactual preconflict baseline. The analysis draws on projections that simulate Sudan's trajectory in the absence of conflict and contrasts it with

observed and expected outcomes under continued violence through 2025. The results highlight the extensive macroeconomic and welfare losses attributable to the conflict, including contraction in GDP, sectoral disruption, increased poverty and food insecurity, and deep declines in household consumption.

ECONOMIC GROWTH TRAJECTORIES: PRECONFLICT BASE VS. CONFLICT SCENARIO

Figure 7.1 compares Sudan's historical and projected GDP growth and output levels under two scenarios: a baseline preconflict trajectory and an alternative reflecting the impact of the ongoing conflict. The contrast is stark: while the base case indicates stable growth averaging around 3.3 percent annually post-2024, the conflict scenario shows a severe contraction in the immediate years following the outbreak of violence. GDP shrinks by 18.4 percent in 2023, plunges further by 20.4 percent in 2024, and contracts again by 10.3 percent in 2025. Comparing the projected period of 2023–2025 with Sudan's past downturns, including contractions by 6.2 percent and 17 percent in the mid-1980s and 2012, respectively (World Bank 2025), the current contraction appears far more severe and ranks among the most serious economic crises in the country's recent history. The economic devastation is equally visible in real GDP values. Under the conflict scenario, GDP falls from US$24.6 billion in 2023 to a low of $17.6 billion in 2025, a cumulative decline of nearly 30 percent relative to the baseline.[1] Even as the conflict scenario assumes some stabilization post-2026, the economic recovery remains shallow and protracted. By 2029, the conflict-affected economy only regains $20 billion, still significantly below the $37.4 billion baseline projection for that year. These trends illustrate not only the scale of output losses but also the long-term scarring effects of conflict on capital accumulation, investor confidence, and institutional capacity.

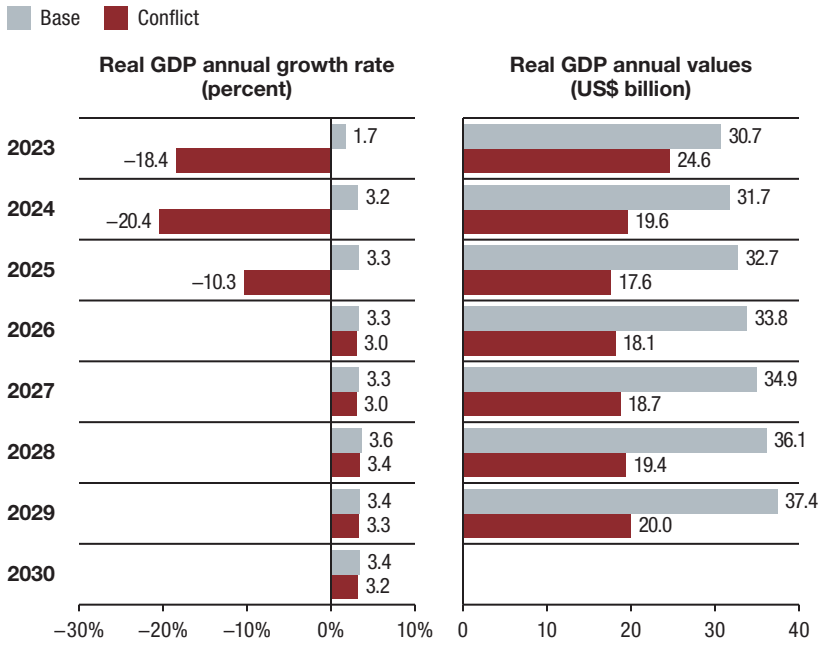
These projections are based on preconflict estimates by the IMF, published in April 2023 (IMF 2023a), as well as revised projections from October 2024 (IMF 2023b) that capture the impact of the conflict on GDP in 2023 and 2024. This study assumed the conflict would persist through the end of 2025, with GDP projected to decline by 10.3 percent in that year alone. Thereafter, we assume slightly lower annual real GDP growth than in the IMF projections.[2]

Figure 7.2 shows annual growth rates for agriculture, industry, and services between 2023 and 2030 in the conflict scenario. All sectors experience sharp contractions in the initial years of the conflict, with agriculture suffering the deepest decline, contracting by 25 percent in 2023 and 19.5 percent

1 All dollars are US dollars.

2 Siddig et al. (2024) presents similar simulations through 2028.

FIGURE 7.1 Annual real GDP growth rates and values, preconflict (base) and conflict scenarios, 2023–2030

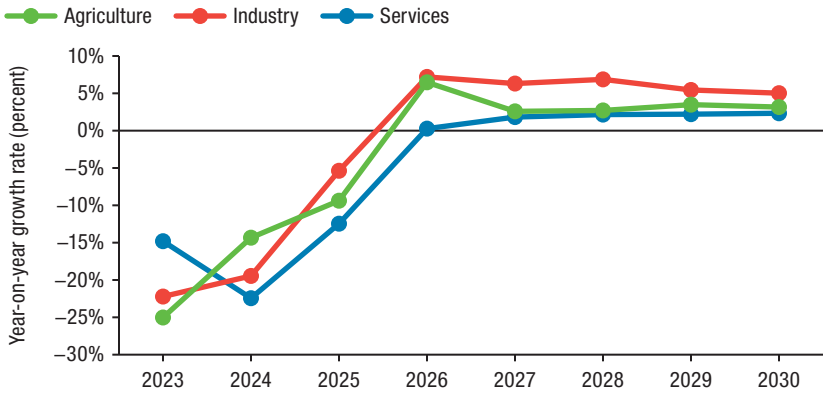


Source: IMF (2023a); (2023b) and authors' estimates.

in 2024. In this simulation, the negative productivity shock to agriculture reflects the compounded effects of insecurity, displacement, disruptions to seasonal planting cycles, and the breakdown of rural markets. Industry contracts by 22.2 percent in 2023 and 22.4 percent in 2024, driven by damage to industrial infrastructure, reduced energy supply, and curtailed manufacturing. The services sector, which is often more resilient in conflict-affected settings, also records significant downturns of 14.8 percent in 2023 and 22.4 percent in 2024, indicating the systemic reach of the crisis.

Recovery across all three sectors is gradual and uneven. Agriculture and industry register positive growth beginning in 2026, with agriculture reaching 6.5 percent and industry 7.2 percent, reflecting potential rebound effects, localized stabilization, and adaptive strategies by producers. Services begin to recover more slowly but show consistent positive growth from 2026 onward. However, despite these gains, none of the sectors fully return to their preconflict trajectories by 2030.

FIGURE 7.2 Annual GDP growth rates for agriculture, industry, and services, conflict scenario, 2023–2030



Source: RIAPA model simulations for Sudan.

POVERTY AND FOOD INSECURITY

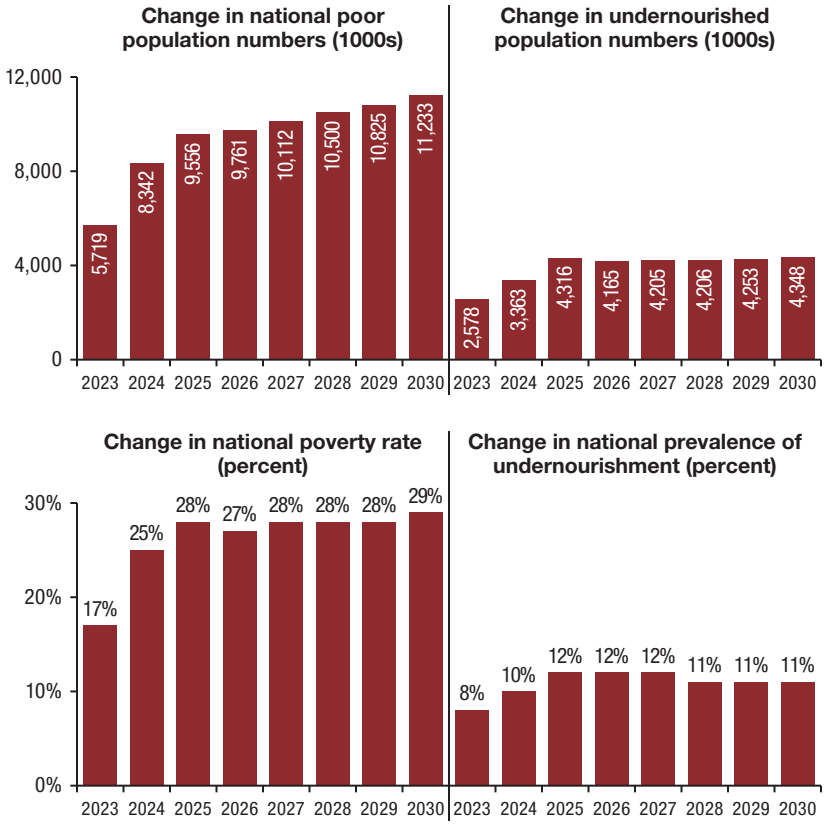
Figure 7.3 highlights the devastating effects of the conflict on poverty and food insecurity in Sudan. National poverty numbers rise sharply from 5.7 million in 2023 to more than 11.2 million by 2030, with the poverty rate increasing by 12 percentage points in 2023 alone and stabilizing at around 28–29 percent above preconflict levels throughout the analysis period. These statistics underscore the immediate and persistent deterioration in household welfare triggered by the conflict.

In terms of food insecurity, our estimate of 29 million people in 2024 is higher than the World Food Programme's figure of 24.5 million (IPC 2024). This difference may partly reflect variations in data sources, methodological approaches, and classification criteria.

Undernourishment also increases significantly. The number of undernourished individuals grows from 2.6 million in 2023 to 4.3 million in 2030. The national prevalence of undernourishment rises by 3–4 percentage points during the same period, peaking at 12 percent in the mid-2020s and remaining above 11 percent through 2030. These outcomes reflect disruptions to food production and distribution, inflationary pressures, and diminished household purchasing power.

The number of poor and undernourished people increases, with a 57 percent increase in poverty and 68 percent of the increase in undernourishment occurring among rural populations. This reflects both the direct impact

FIGURE 7.3 Change in poor and undernourished population, conflict scenario, 2023–2030



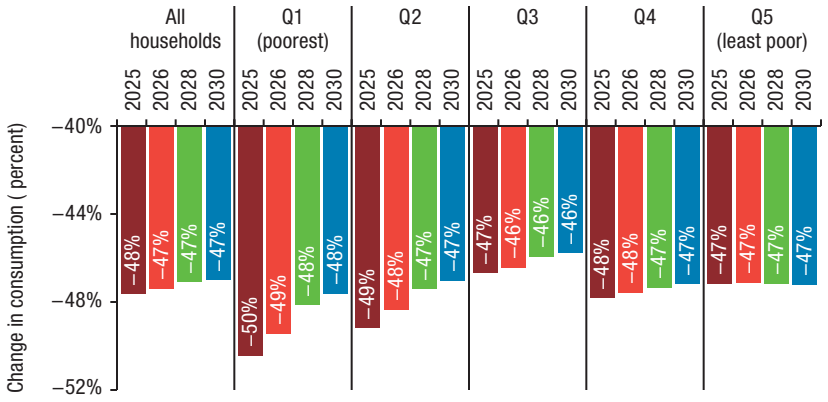
Source: Authors' model simulations.

of conflict on agricultural livelihoods and the more limited access to food, income-generating opportunities, and humanitarian support in rural settings. Nevertheless, the urban impact remains substantial, with 43 percent of newly poor and 32 percent of newly undernourished individuals residing in cities and towns.

HOUSEHOLD CONSUMPTION LOSSES

As shown in Figure 7.4, household consumption is lower for all income groups. By 2025, per capita consumption falls by 48 percent on average, with the poorest quintile experiencing a 50 percent decline relative to the baseline. While the scale

FIGURE 7.4 Percent change in per capita consumption relative to baseline, conflict scenario, selected years (2025–2030)



Source: Authors' model simulations.

of decline remains similar across all quintiles, the welfare impact is more severe for the poorest households, who are less resilient and have fewer coping mechanisms (IFPRI and UNDP 2024a; 2024b). These effects persist through 2030, with only marginal improvement over time. The uniformity in the magnitude of decline across income groups underscores the systemic nature of the shock, while the equity implications reinforce the need for targeted social protection.

Together, these trends reflect not only increased vulnerability but also the erosion of development gains achieved prior to the conflict (UNDP 2022). Thus, the simulation results in Figures 7.2, 7.3, and 7.4 indicate that without a rapid cessation of hostilities and targeted interventions, poverty, food insecurity, and consumption poverty will continue to escalate. The findings align with other studies demonstrating that conflict impairs livelihoods across both rural and urban populations and disproportionately affects the poor, women, and displaced groups (IFPRI and UNDP 2024a; 2024b; Siddig et al. 2024).

Impact of recovery and intervention scenarios relative to conflict

CHANGES IN GROSS DOMESTIC PRODUCT

Table 7.2 presents annual real GDP growth rates and values from 2025 to 2030 across conflict and intervention scenarios. All intervention scenarios prevent further contraction in 2026, reversing the 10.3 percent decline projected under the conflict baseline. The agriculture-focused scenario lifts

TABLE 7.2 Annual real GDP growth rates (%) and values (US$ billion), conflict and intervention scenarios, 2025–2030

	Base	Conflict	Agriculture	Working Capital	Cash Transfers	Combination
			Real GDP Growth Rates (%)			
2025	3.3	–10.3	–10.3	–10.3	–10.3	–10.3
2026	3.3	3.0	5.6	6.3	7.2	6.5
2027	3.3	3.0	4.5	5.5	4.7	4.9
2028	3.6	3.4	5.2	5.7	4.3	5.2
2029	3.4	3.3	3.9	3.1	3.8	3.3
2030	3.4	3.2	3.7	3.7	3.7	3.7
			Real GDP (US$ billions)			
2025	32.7	17.6	17.6	17.6	17.6	17.6
2026	33.8	18.1	18.6	18.7	18.9	18.8
2027	34.9	18.7	19.4	19.8	19.8	19.7
2028	36.1	19.4	20.5	20.9	20.6	20.7
2029	37.4	20.0	21.3	21.5	21.4	21.4
2030	38.6	20.7	22.1	22.4	22.2	22.2

Source: Authors' model simulations.

GDP growth to 5.6 percent, while working capital and combination scenarios achieve 5.3 percent and 6.5 percent, respectively. The cash transfer scenario delivers the strongest rebound at 7.2 percent.

The differences are also evident in GDP levels. By 2026, GDP under the combination scenario reaches $20.6 billion compared to $18.1 billion under the conflict case, with 14 percent improvement. Gains remain stable through 2030, with GDP under the combination scenario estimated at $22.2 billion, well above the $20 billion projected under continued conflict. The agricultural, cash transfer, and combination scenarios all contribute meaningful gains, though less than the working capital scenario, underscoring the sustained value of long-term investment.

When comparing the four interventions, the cash transfer scenario delivers the strongest immediate recovery. In 2026, GDP growth under the cash transfer scenario reaches 7.2 percent, outperforming the working capital, agriculture, and combination scenarios. The working capital intervention also drives significant medium-term recovery, while the agriculture intervention shows a more moderate but still positive rebound.

TABLE 7.3 Average annual growth rates (%) of total and sectoral GDP, conflict and intervention scenarios, 2022–2030

Indicators	Base	Conflict	Agriculture	Working Capital	Cash Transfers	Combination
Total GDP	2.5	–4.4	–3.7	–3.6	–3.7	–3.7
Agriculture GDP	2.3	–4.1	–1.6	–1.6	–1.6	–1.7
Industry GDP	2.6	–2.6	–2.4	–2.2	–2.4	–2.3
Services GDP	2.5	–5.3	–5.1	–4.9	–5.0	–5.0

Source: Authors' model simulations.

By 2027, the combination scenario yields the highest GDP growth among the interventions, reflecting the cumulative benefits of a multipronged strategy. Although cash transfers initially provide the strongest boost, over time the combination of interventions sustains stronger and more balanced growth. This highlights the differing comparative advantages of interventions across periods: cash transfers stimulate immediate consumption and demand, working capital strengthens private sector activity in the medium term, and agriculture reinforces long-term productivity and resilience.

Table 7.3 further shows the average annual growth rates for total and sectoral GDP between 2022 and 2030 under the conflict and intervention scenarios. Under the conflict scenario, the economy contracts sharply, with an average annual GDP decline of 4.4 percent. Each of the interventions improves this outlook, with the combination scenario raising the average annual GDP growth rate to –3.7 percent, the same as that achieved individually by the agriculture, working capital, and cash transfer interventions.

At the sectoral level, agriculture experiences the greatest relative improvement, shifting from –4.1 percent average annual growth under the conflict scenario to –1.6 percent under all intervention strategies. Industrial GDP sees a modest recovery from –1.2 percent under conflict to roughly –0.5 percent across interventions, while services remain the most affected, averaging a decline of around –5 percent regardless of intervention type.

Comparing the four interventions across sectors, agriculture GDP responds most positively under all scenarios, demonstrating the sector's sensitivity to both direct support and spillover effects. Working capital and cash transfers generate modest gains in industry GDP, suggesting that enterprise support and liquidity injections can stimulate production and trade, though not dramatically. Services remain persistently weak, with limited differentiation across interventions, reflecting the sector's structural dependence on

TABLE 7.4 Change in number of poor and undernourished people, conflict and intervention scenarios, 2025–2030

	Conflict	Agriculture	Working Capital	Cash Transfers	Combination
			Change in national poor population (thousands)		
2025	9,556	9,556	9,556	9,556	9,556
2026	9,761	9,342	9,252	9,236	9,258
2027	10,112	9,370	8,996	9,155	9,078
2028	10,500	9,257	8,925	9,207	9,068
2029	10,825	9,490	9,349	9,388	9,449
2030	11,233	9,705	9,600	9,641	9,700
			Change in national undernourished population (thousands)		
2025	4,316	4,316	4,316	4,316	4,316
2026	4,165	3,736	3,613	3,342	3,559
2027	4,205	3,490	3,220	3,039	3,335
2028	4,206	3,192	2,971	3,069	3,195
2029	4,253	3,157	3,098	3,086	3,238
2030	4,348	3,171	3,114	3,062	3,249

Source: Authors' model simulations.

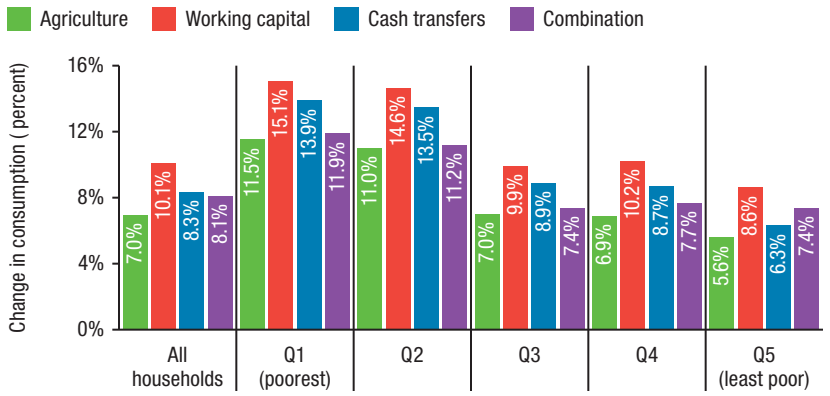
broader macroeconomic stability and institutional functioning. The combination scenario offers slight improvements in all sectors, but especially in agriculture, reinforcing the value of integrated support for rebuilding Sudan's productive capacity.

POVERTY AND FOOD INSECURITY

Table 7.4 presents the effects of the intervention scenarios on national poverty and undernourishment between 2025 and 2030. Compared to the conflict scenario, all interventions reduce the number of poor and undernourished people, but to varying degrees. The working capital and cash transfer scenarios show the most immediate impact on poverty reduction, especially from 2026 onward. By 2030, the cash transfer scenario reduces the number of poor by nearly 1.6 million compared to the conflict baseline. Agriculture interventions yield consistent but slightly lower improvements in poverty, while the working capital scenario leads to the lowest poverty numbers by 2030.

In terms of undernourishment, the cash transfer scenario shows the most pronounced benefits across the simulation period, with the number of

FIGURE 7.5 Change in per capita consumption (%), intervention relative to conflict, 2028



Source: Authors' model simulations.

undernourished people falling below 3.1 million by 2030—compared to more than 4.3 million under the conflict scenario. The agriculture, working capital, and combination scenarios show relatively smaller but still positive impacts, especially from 2026 onward.

HOUSEHOLD CONSUMPTION IN THE CONFLICT AND INTERVENTION SCENARIOS

Figure 7.5 shows the change in per capita household consumption across intervention scenarios relative to the conflict scenario in 2028, the last year of interventions. Across all households, working capital and cash transfers generate the largest improvements in consumption, with increases of 10.1 percent and 8.3 percent, respectively. Agriculture support yields a smaller gain of 7 percent, while the combination scenario delivers an 8.1 percent improvement.

The greatest relative gains are observed among the poorest quintile (Q1), for whom working capital support and cash transfers increase consumption by 15.1 percent and 13.9 percent, respectively. Even the agriculture-only intervention achieves a strong 11.5 percent gain for Q1, highlighting the pro-poor potential of all three strategies. Among wealthier quintiles (Q4 and Q5), gains are more modest but remain positive, with increases ranging between 6 percent and 10 percent. Notably, the combination scenario yields more balanced improvements across all groups, indicating that integrated approaches provide more equitable consumption recovery.

These distributional effects confirm that targeted interventions not only lift aggregate consumption but can also reduce inequality in postconflict recovery outcomes. This reinforces the importance of tailoring policies to address both overall welfare and distributional justice.

Taken together, these findings confirm that swift and well-targeted interventions can substantially accelerate recovery and prevent long-term economic stagnation. The comparative analysis of intervention strategies underscores that while each approach offers specific strengths, the effectiveness of most economic variables is amplified when delivered in combination. Cash transfers offer rapid relief to households; working capital support catalyzes private sector activity; and agricultural revitalization lays a foundation for sustainable food system recovery. The combination scenario consistently delivers the highest aggregate and distributional benefits, making a compelling case for integrated, multisectoral recovery strategies tailored to Sudan's evolving postconflict context.

Conclusion and policy implications

This chapter set out to analyze the macroeconomic and welfare consequences of the ongoing conflict in Sudan and identify potential recovery pathways. To achieve this, it employed a recursive dynamic CGE model calibrated to Sudan's 2021 SAM, simulating three main trajectories: a preconflict baseline, a conflict scenario assuming the continuation of violence through 2025, and four targeted intervention scenarios focused on agricultural revitalization, working capital support, cash transfers, and a combined package.

The analysis clearly shows that the conflict has caused significant and prolonged macroeconomic contraction, sectoral disruptions, sharp increases in poverty and food insecurity, and deep declines in household consumption. These impacts are widespread across rural and urban areas and disproportionately affect vulnerable groups.

At the same time, the modeling demonstrates that a carefully designed and well-sequenced recovery strategy—focused on agriculture, private sector revitalization, and household-level support—can meaningfully reverse some of the damage. While no single intervention is sufficient on its own, a combined approach delivers broad-based improvements across macroeconomic and welfare indicators. Such findings support a policy agenda that is coordinated, inclusive, and responsive to immediate needs while laying the foundation for long-term resilience.

Based on our modeling results, we suggest the following policy recommendations.

Prioritize integrated recovery packages: A combined investment approach, spanning agriculture, enterprise revitalization, and household income support, delivers the most substantial and equitable impacts. Policymakers and development partners should prioritize bundling interventions rather than deploying them in isolation.

Frontload cash transfers and working capital: Cash transfers and working capital support yield immediate improvements in GDP and welfare outcomes. These should be prioritized early in the recovery phase to stabilize consumption and restart private sector activity.

Invest in agriculture for long-term resilience: While agriculture's short-term gains are moderate, its long-term growth potential and role in food security and employment make it a strategic priority. Investments in seeds, extension, input access, and postharvest systems should be expanded.

Target the poorest and most affected groups: All interventions significantly benefit the poorest households. Recovery programs should maintain a clear pro-poor orientation, with mechanisms to reach conflict-affected, displaced, and rural populations.

Expand fiscal space through donor support: The interventions modeled assume US$1 billion in support, a small fraction of Sudan's overall recovery needs. Development partners should coordinate to expand financial support, recognizing that full recovery will require sustained multiyear investment.

Monitor and adjust based on data: As conditions evolve, recovery efforts should be continually informed by real-time data on prices, food access, and household welfare. Sudan's data systems, including those used in this analysis, should be strengthened to support adaptive policymaking.

These recommendations aim to guide urgent and coordinated recovery efforts while laying the groundwork for inclusive and sustained economic transformation in Sudan. As Sudan hopefully moves toward stabilization and sustained economic growth, investing in scalable, evidence-informed interventions will be critical to reversing welfare losses and supporting inclusive recovery.

References

Ahmed, M., M. Raouf, and K. Siddig. 2026. "What Are the Economic and Poverty Implications for Sudan If the Conflict Continues through 2025?" *The Journal of Development Studies* 62 (1):106–127. https://doi.org/10.1080/00220388.2025.2510642

Sudan, CBoS (Central Bank of Sudan). 2024. *National Accounts Data*. CBoS.

de Groot, O.J., C. Bozzoli, A. Alamir, and T. Brück. 2022. "The Global Economic Burden of Violent Conflict." *Journal of Peace Research* 59 (2):259–276. https://doi.org/10.1177/00223433211046823

Fathi, H.M. 2025. "Two Years of War and the Possibility of Reconstruction." *Sudan Horizon*, April 15. https://sudanhorizon.com/two-years-of-war-and-the-possibility-of-reconstruction/

Guo, Z., H. Abushama, K. Siddig, O.K. Kirui, K. Abay, and L. You. 2024. "Monitoring Indicators of Economic Activities in Sudan Amidst Ongoing Conflict Using Satellite Data." *Defence and Peace Economics* 35 (8):992–1008. https://doi.org/10.1080/10242694.2023.2290474

IFPRI (International Food Policy Research Institute). 2024. "2021 Social Accounting Matrix for Sudan." *Harvard Dataverse*, December 14. https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/IKW7UT

IFPRI and UNDP (United Nations Development Programme). 2024a. *Livelihoods in Sudan Amid Armed Conflict: Evidence from a National Rural Household Survey*. IFPRI and UNDP. https://www.undp.org/sudan/publications/livelihoods-sudan-amid-armed-conflict

IFPRI and UNDP. 2024b. *The Socio-Economic Impact of Armed Conflict on Sudanese Urban Households*. IFPRI. https://hdl.handle.net/10568/159599

IMF (International Monetary Fund). 2020. *Sudan: Staff Report for the 2019 Article IV Consultation*. IMF. https://www.imf.org/en/publications/cr/issues/2020/03/10/sudan-2019-article-iv-consultation-press-release-staff-report-and-statement-by-the-executive-49254

IMF. 2023a. *World Economic Outlook, April 2023: A Rocky Recovery*. IMF. https://www.imf.org/en/publications/weo/issues/2023/04/11/world-economic-outlook-april-2023

IMF. 2023b. *World Economic Outlook, October 2023: Navigating Global Divergences*. IMF. https://www.imf.org/en/publications/weo/issues/2023/10/10/world-economic-outlook-october-2023

IPC (Integrated Food Security Phase Classification). 2024. *Sudan: Acute Food Insecurity Situation - Updated Projections and FRC Conclusions for October 2024 to May 2025*. IPC. https://www.ipcinfo.org/ipc-country-analysis/details-map/en/c/1159433/

Jerven, M. 2013. *Poor Numbers: How We Are Misled by African Development Statistics and What to Do About It*. Cornell University Press. https://www.cornellpress.cornell.edu/book/9780801478604/poor-numbers/#bookTabs=4

Kirui, O.K., K. Siddig, H. Abushama, and A.S. Taffesse. 2023a. "Armed Conflict and Business Operations in Sudan: Survey Evidence from Agri-Food Processing Firms." Sudan SSP Working Paper 11. IFPRI. https://hdl.handle.net/10568/140193

Kirui, O.K., K. Siddig, H. Abushama, and A.S. Taffesse. 2023b. "Sudan's Ongoing Conflict Disrupts Agrifood Processing and Aggravates Unemployment." *IFPRI Blog* (blog). December 15. https://www.ifpri.org/blog/sudans-ongoing-conflict-disrupts-agrifood-processing-and-aggravates-unemployment/

Kirui, O.K., K. Siddig, M. Ahmed, H. Abushama, and A.S. Taffesse. 2023. "Impact of the Ongoing Conflict on Smallholder Farmers in Sudan: Evidence from a Nationwide Survey." Sudan SSP Working Paper 17. IFPRI. https://hdl.handle.net/10568/140241

Resnick, D., H. Abushama, M. Ahmed, O.K. Kirui, and K. Siddig. 2025. "Under the Gun: Military and Paramilitary Actors in Sudan's Agri-Food System." IFPRI Discussion Paper 02328. IFPRI. https://hdl.handle.net/10568/173517

Siddig, K., and M. Basheer. 2024. "We Need to Know the Economic Impacts of Sudan's Ongoing Conflict." *Nature Human Behaviour* 8 (6):1003–1004. https://doi.org/10.1038/s41562-024-01883-y

Siddig, K., M. Raouf, and M.O.M. Ahmed. 2023. "The Economy-Wide Impact of Sudan's Ongoing Conflict: Implications on Economic Activity, Agrifood System and Poverty." Sudan SSP Working Paper 12. IFPRI. https://hdl.handle.net/10568/140293

Siddig, K., J. Thurlow, M. Ahmed, J. Randriamamonjy, and M. Raouf. 2024. "Impact of Ongoing Conflict and Pathways to Recovery in Sudan: Agricultural Bounce-Back, Infrastructural Investment, and Social Protection." Sudan SSP Working Paper 21. IFPRI. https://hdl.handle.net/10568/168104

Sudan Akhbar. 2023. "Finance Minister Reveals Shocking Figure for Sudan's Losses Due to War." *Sudan Akhbar*, November 26. https://www.sudanakhbar.com/1455725

Thurlow, J. 2008. *A Recursive Dynamic CGE Model and Microsimulation Poverty Module for South Africa*. IFPRI. https://hdl.handle.net/10568/180877

UNDP (United Nations Development Programme). 2019. *Human Development Report 2019: Beyond Income, Beyond Averages, Beyond Today: Inequalities in Human Development in the 21st Century*. UNDP. https://digitallibrary.un.org/record/3846848?ln=en&v=pdf

UNDP. 2022. *Human Development Report 2021/2022: Uncertain Times, Unsettled Lives: Shaping Our Future in a Transforming World*. UNDP. https://digitallibrary.un.org/record/3986309?ln=en&v=pdf

UNHCR (United Nations High Commissioner for Refugees). 2026. *Sudan Situation Map Weekly Regional Update – 02 February 2026*. UNHCR. https://data.unhcr.org/en/documents/details/120945

World Bank. 2009. *Sudan - The Road toward Sustainable and Broad-Based Growth*. World Bank. https://hdl.handle.net/10986/3183

World Bank. 2021. *Concept Project Information Document (PID) - Sudan Data and Statistics Strengthening Project - P177123*. World Bank. https://documentos.bancomundial.org/es/publication/documents-reports/documentdetail/319991626455970673

World Bank. 2023. *Sudan Economic Update: Missed Opportunities Amidst Deepening Fragility*. World Bank. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099540409212319137

World Bank. 2024. "World Development Indicators." Updates of October 2024. https://databank.worldbank.org/home

World Bank. 2025. *Sudan Economic Update, May 2025: The Economic and Social Consequences of the Conflict - Charting a Path to Recovery*. World Bank. https://hdl.handle.net/10986/43314