

SAVING
LIVES
CHANGING
LIVES

Comprehensive Food Security and Vulnerability Assessment (CFSVA) - Sudan

Summary Report, Q1 2022

Introduction

The Comprehensive Food Security and Vulnerability Assessment (CFSVA) was conducted from January to March 2022 against the backdrop of ongoing economic and political instability, and persistent chronic food insecurity and malnutrition. The assessment was conducted in all 18 states of Sudan and sought to ascertain the food security situation among the resident population, assess risk factors that contribute to food insecurity, and highlight vulnerable geographical areas. This information on vulnerability enables well-informed decision-making processes for WFP programme design and targeting purposes and provides evidence for the expansion of future assistance programs. The CFSVA results are also a major data source for the Integrated Food Security Phase Classification (IPC)¹; the Sudan Humanitarian Needs Overview (HNO); and the Sudan Humanitarian Response Plan (HRP).

During this food security assessment, data was collected from approximately 37,500 resident households in 183 localities distributed across all 18 states of Sudan. The findings are representative of households at the locality level. The questionnaire surveyed households on demographics, housing, assets, livelihoods, expenditures, food source and consumption, and coping strategies. Additional information was collected on child health, feeding and caring practices, as well as awareness of nutrition-related messages.

Executive Summary

The combined effects of economic and political crisis, conflict and displacement, climate shocks, including droughts and floods, and poor harvests are significantly affecting peoples' access to food in Sudan. According to this assessment, **34 percent of the population in Sudan, amounting to over 15 million people,² are food insecure** during the first quarter of 2022. This is an increase of 7 percent compared to the same time one year ago, when 27 percent of the population, amounting to over 12 million people, were food insecure. The highest prevalence of food insecurity was observed in West Darfur (65 percent); Central Darfur (59 percent); North Darfur (56 percent); and Blue Nile (50 percent). Food insecurity worsened across most states, with households headed by women more food insecure than their counterparts by 11 percent, primarily due to limited access to the labour market.

Economic vulnerability plays a major role in this food insecurity as 95 percent of households spend more than 65 percent of their total expenditure on food. This disproportionate amount of expenditure on food prevented a widening of the food gap in the short run but added additional risk factors to an already fragile economic situation, exposing households to future protection risks, food insecurity and degradation of their overall well-being. Over half adopted negative livelihood-based coping strategies, focusing on immediate food needs and depleting their assets. Households were forced to cut on their health and education expenditures and were unable to create or invest in livelihood assets. One third adopted negative food-based coping mechanisms to cope with a shortfall of food, forcing households to compromise on the quality and quantity of their food intake, with the most common strategy being to rely on less preferred or less expensive food, which 26 percent resorted to. The prevalence of inadequate food consumption increased from 17 to 22 percent.

¹ CFSVA figures are different from IPC figures due to different methodologies of assessing food security, in which the former covers more diverse indicators in order to profile food insecure and vulnerable households and identify root causes of hunger. This information is used for WFP's programme decision-making purposes.

² Estimated total population in Sudan is 46.6 million.

With the deterioration of the macroeconomic environment characterized by high inflation, the purchasing power of households has significantly diminished. 48 percent are unable to afford one WFP local food basket,³ which has increased by 155 percent to 353.3 SDG⁴ compared to the first quarter of 2021. In addition, the surge in conflict and intercommunal violence in parts of Darfur and the Kordofans has eroded livelihoods, destroyed food stocks, damaged farms, disrupted markets, and triggered widespread displacement, as well as constrained humanitarian access. Erratic rainfall distribution during the rainy season in 2021, with localized dry spells and low rainfall in certain states, generated a poor harvest in the 2021/22 agricultural season, with a significant deficit in sorghum, the main staple in Sudan, for the first time in years. This has negatively affected food availability and livelihood opportunities in the agricultural sector, which over 60 percent of the population depend on.

Food prices are expected to continue to rise as food stocks in Sudan run low and global food prices, driven by the conflict in Ukraine and the military blockade in the Black Sea region, increase. The rising prices of fuel, fertilizer and other essential agricultural inputs will impact the upcoming planting season, as farmers will be forced to plant less, adopt cash-crop production, or assume alternative livelihood activities, leading to lower yields and thereby impacting food availability. High production costs will also unfold into high food prices during the harvest. In light of the upcoming lean season (June to September), the food security situation is expected to continue to deteriorate, as household's food stocks are depleted and livelihood opportunities (especially related to crops, agricultural wage labour, and salaried work) are more limited. The level of food insecurity may reach up to 40 percent (18 million people) by the third quarter of 2022.⁵

Context

The food security status of any household is determined by the interaction of socioeconomic, agri-environmental and biological factors,⁶ the first two are considered below.

Socioeconomic context

Sudan continues to face a macroeconomic crisis, driven by the removal of fuel and wheat subsidies, the devaluation of the local currency and high inflation rates.⁷ Food prices have soared, with the national average price of WFP's local food basket increasing by 155 percent, from 138.7 SDG in the first quarter of 2021 to 353.3 SDG in the first quarter of 2022. The Sudanese pound has depreciated compared to one year ago,⁸ with commercial banks now able to set their own rate in line with the parallel market. While the Sudanese pound showed some level of stability during the last year, it is expected to depreciate in the coming months due to increased importation of fuel, wheat and other production inputs, as well as political instability and social unrest, which will further drive-up food prices. Attempts to correct the trade deficit, which is spurring inflation, have been made by the Ministry of Finance and Economic Planning by limiting exportation of commodities, including food and fuel, reserving them for domestic consumption, and decreasing importation of commodities. The government recently increased customs by 100 percent

³ See Annex 3 for information on the composition of WFP's local food basket.

⁴ This is the national average cost of the LFB.

⁵ This is based on a WFP projection from February 2022, which used 2021 CFSVA data as a baseline and factored in projected figures for the local food basket cost and daily labour wages to forecast food security levels in the first and third quarter of 2022.

⁶ Technical Guidance of WFP: Consolidated Approach for Reporting Indicators of Food Security (Third Edition, December 2021)

⁷ The annual average inflation for 2021 was 359.09 percent, compared to 163.26 percent in 2020. In April 2022, the inflation rate reached 220.7 percent (year on year).

⁸ In Q1 2022, 1 USD = 538 SDG, while in Q1 2021, 1 USD = 350 SDG, a depreciation of 54 percent.

to cover the revenue deficit in the state's 2022 general budget, while keeping the customs dollar price unchanged at 430 SDG.

The civil unrest following the 25 October 2021 military takeover is negatively impacting the economy. Barriers to export and import, blockades of national routes, and deteriorating enabling systems in regards to policies and civil services, disrupt market systems across the country, especially food value chains. The suspension of international financial assistance and external development funds has also derailed economic gains and exacerbated the macroeconomic decline. Constraints in how international organisations can engage with government counterparts has impacted the implementation of humanitarian programs. The political turmoil is also putting the implementation of the Juba Peace Agreement at risk. If the tenuous socio-political conditions persist, the economic situation will worsen, thereby leading to a further deterioration of the already precarious food security situation.

Since last October, there has been a surge in conflict and intercommunal violence in parts of Darfur and the Kordofans, triggering widespread displacement.⁹ The situation in these areas remain volatile. In April 2022, 165 people were killed in Kerenik locality and Geneina, West Darfur, following intercommunal clashes between Arab nomads and Masalit tribes, sparking the displacement of 55,000 people in Kerenik town. The rising insecurity across the country has eroded livelihoods, destroyed food stocks, damaged farms, disrupted markets and brought about unemployment, as well as constrained humanitarian access. Intercommunal clashes and intensified violence between nomads and farmers over natural resources, aggravated by the impact of climate change, are expected to continue to drive population displacement. Gadarif, Kassala, and Blue Nile states are also anticipated to continue receiving refugees from the Tigray Region of Ethiopia. Increased numbers of returnees may also spark land tenure conflicts as people return to their original land.

The conflict in Ukraine is also having implications on food access and availability in Sudan. Imported wheat represents over 80 percent of Sudan's annual consumption. Disruptions in wheat production and cereal export flows due to military blockades in the Black Sea region are limiting global wheat supplies and unfolding into higher global wheat prices.¹⁰ As Sudan imports on average 50 percent of its wheat from Russia and 4 percent from Ukraine¹¹, food access and availability will be negatively impacted, especially when domestic wheat stocks are depleted from July onwards. Wheat production in Sudan in the 2021/22 agricultural season was 13 percent below the five-year average. Russia is also the largest exporter of nitrogen fertilizer globally, and the second largest exporter of phosphorus and potassium fertilizers. Disruptions in fertilizer production and export will further augment agricultural production costs and contribute to higher food prices. Rising fertilizer prices,¹² compounded by soaring gas and fuel prices¹³ will negatively impact the upcoming planting season, as farmers will be unable to afford these crucial agricultural inputs, thereby opting to plant less, adopt cash-crop production, or assume alternative livelihood activities, leading to lower yields and thereby impacting food availability. High production costs will also unfold into high food prices during the harvest.

⁹ [Sudan | Situation Reports \(unocha.org\)](#)

¹⁰ By mid-March, the cost of imported wheat increased to more than USD 550/MT, an increase of 180 percent compared to the same period in 2021.

¹¹ Average wheat imports to Sudan 2017-21, UN Comtrade

¹² Global fertilizer prices have risen nearly 30 percent since the start of 2022, following last year's 80 percent surge. Link: <https://blogs.worldbank.org/opendata/fertilizer-prices-expected-remain-higher-longer>

¹³ Fuel prices have increased by 478 percent, from 12,000 SDG per barrel in Q1 2021 to 69,300 SDG per barrel in Q1 2022.

Agricultural context

According to the Crop and Food Supply Assessment Mission ([CFSAM](#)), the performance of the agricultural season for 2021/22 was poor in the irrigated, semi-mechanized and traditional rainfed sectors. The summer season in 2021 was characterized by erratic rainfall distribution, with localized dry spells and poor rainfall affecting crop production in certain states, including high-production states Kassala and Gadarif, as well as North Darfur, North Kordofan and Red Sea. Other areas, especially the high-production state of Sinnar, were affected by heavy rains, causing localized floods and waterlogging. Crop production was further hampered by high prices of agricultural inputs (seeds, fuel, fertilizer, agricultural machineries, labour); the spread of crop pests and diseases; reduced availability of herbicides; and challenges in irrigation systems, notably in Al Gazira. Conflicts and insecurity in parts of Darfur and South Kordofan also constrained agricultural activities. The number of beneficiaries receiving short-term agricultural credit from the Agricultural Bank of Sudan decreased by nearly 50 percent, from 66,498 in 2020 to 34,032 in 2021, primarily due to the high inflation.¹⁴

For the first time in many years, there is a significant deficit in sorghum, the main staple. The total production of main cereal crops (sorghum,¹⁵ millet¹⁶ and wheat¹⁷) in 2021/22 is estimated to be 35 percent below last year's production and 30 percent lower than the five-year average.

Sudan consequently faces a significant cereal supply gap. The estimated 5.1 million tons of cereal harvested in the 2021/22 season will cover 65 percent of the 7.6 million tons Sudan typically requires. Import requirements for 2022 are projected to be around 2.5 million tons, particularly for wheat (2 million metric tons) and sorghum (0.3 million metric tons), which is 24 percent higher than last year and 35 percent higher than the five-year average. While cereal deficits are typically covered by commercial imports, the shortage in hard currency reserves limits both the government's and private sector's ability to meet import requirements. Furthermore, reluctance and inability of the government to purchase local wheat will likely discourage farmers from wheat cultivation in the upcoming season, as many resorted to informal trade and smuggling to the neighboring countries. The poor harvest has therefore negatively affected food availability and livelihood opportunities in the agricultural sector, which over 60 percent of the population depend on, and is a key driver of the deteriorating food security in Sudan.

Food Security (CARI)

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food, which meets their dietary requirements and food preferences for an active and healthy life.¹⁸ There are four interrelated dimensions pertinent to food security: food availability, food access, utilization, and stability.

Food availability addresses the supply side of food security and is determined by the level of food production, stock levels and net trade, as well as food aid. Food access refers to households having adequate resources to acquire appropriate food for a nutritious diet, and is determined by income, expenditure, market conditions, and prices. Utilization considers sufficient energy and nutrient intake by individuals as the result of proper care and feeding practices, food preparation, dietary diversity, and

¹⁴ In 2021, 86 percent of credit was provided to the semi-mechanized rainfed sector, 5 percent to the irrigated sector and the remaining 9 percent to the traditional rainfed sector.

¹⁵ Sorghum production is forecast at 3.5 million metric tons, 32 percent lower than the previous year and 28 percent less than the five-year average.

¹⁶ Millet production is forecast at 0.9 million metric tons, 53 percent lower than the previous year and 44 percent below the five-year average.

¹⁷ Wheat production is forecast at 0.6 million metric tons, 13 percent below both last year's output and the five-year average.

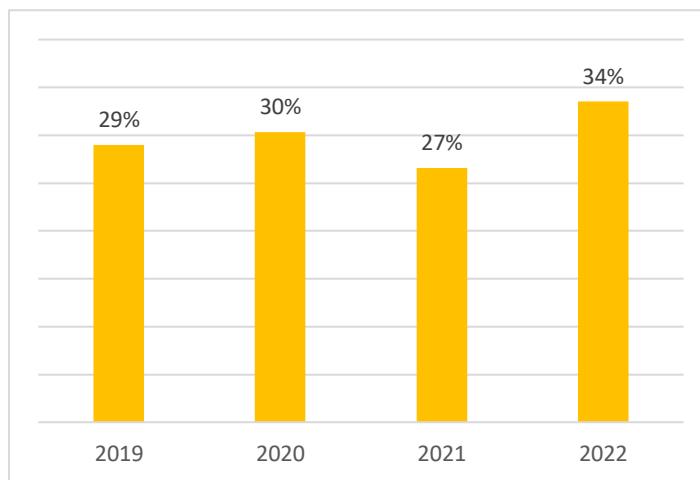
¹⁸ FAO (1996) 1996 World Food Summit – Final Report. Available at: <https://www.fao.org/3/w3548e/w3548e00.htm>

intra-household distribution of food. Stability pertains to household's stable access to food at all times, and considers the impact of climate and weather, political conditions, and economic circumstances (e.g. unemployment, inflation) that may impact food security at a certain time. Taken together, these components encapsulate the food security situation of a household.¹⁹

Food insecurity is determined by the WFP corporate indicator, Consolidated Approach to Reporting Indicators of Food Security (CARI). The CARI assesses availability and access to food by measuring the current status of household consumption. It also evaluates the ability of a household to stabilize consumption over time by measuring coping capacity and economic vulnerability. As such, CARI combines a suite of food security indicators, including food consumption, food expenditure share, and food and livelihood-based coping strategies, into a summary composite indicator. Central to the approach is an explicit classification of households into four descriptive groups: food secure, marginally food secure, moderately food insecure, and severely food insecure. These classifications provide a representative estimate of food security within the Sudanese population at the national, state and locality level.

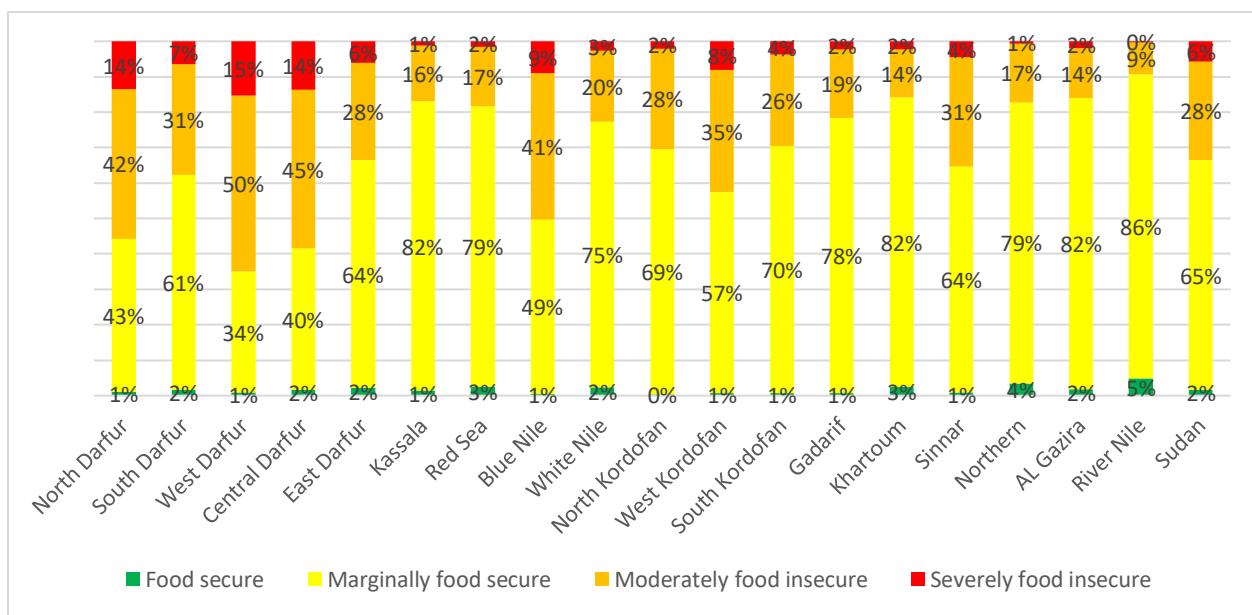
According to the CARI console, **34 percent of resident households are classified as food insecure** during the first quarter of 2022, which amounts to over 15 million people. This is an increase of 7 percent compared to the same time in 2021, and higher than the past few years (see Figure 1).

Figure 1: Prevalence of food insecurity in Sudan between 2019 and 2022

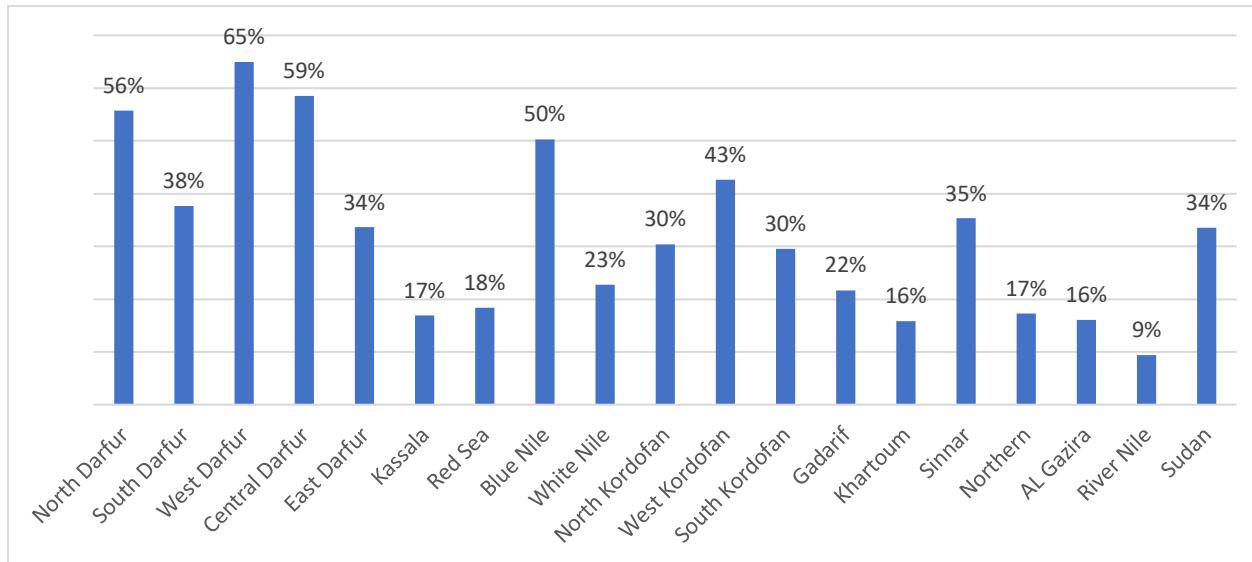


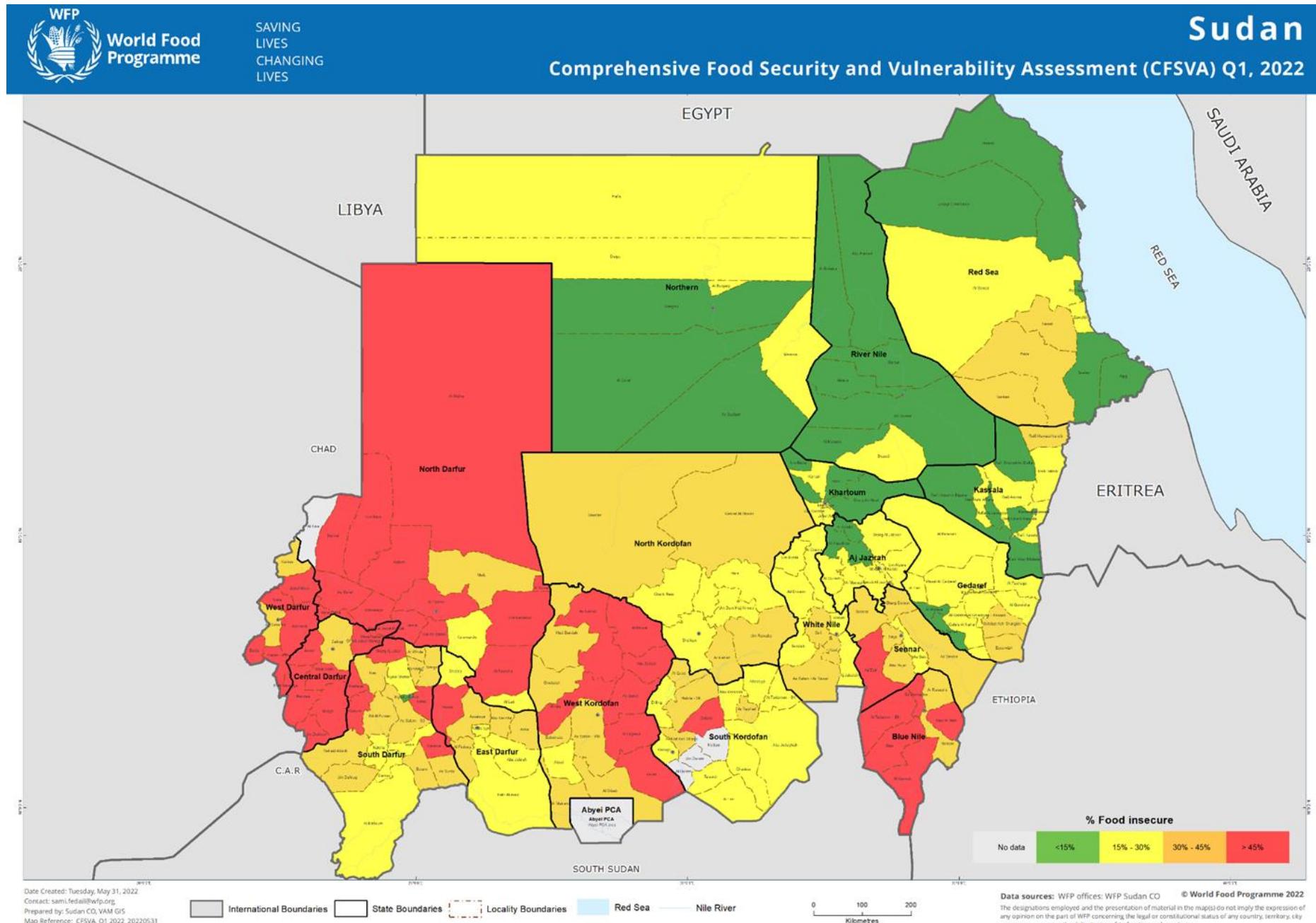
Among the food insecure, 28 percent of households are moderately food insecure and 6 percent are severely food insecure. Households that are moderately food insecure have food consumption gaps and are unable to meet required food needs without applying crisis coping strategies. Households that are severely food insecure have extreme food consumption gaps or have suffered extreme loss of livelihood assets that will eventually lead to food consumption gaps.

¹⁹ Technical Guidance of WFP: Consolidated Approach for Reporting Indicators of Food Security (Third Edition, December 2021)

Figure 2: Food security classification according to CARI console by state


On state level, the highest prevalence of food insecurity was observed in the Darfurs, the Kordofans, and Blue Nile. West Darfur had the highest level of food insecurity at 65 percent, followed by Central Darfur at 59 percent, North Darfur at 56 percent, Blue Nile at 50 percent, and West Kordofan at 43 percent. River Nile has the lowest prevalence of food insecurity at 9 percent.

Figure 3: Prevalence of food insecurity in Q1 2022 by state




North Darfur: The level of food insecurity in North Darfur increased by 18 percent, from 38 percent in 2021 to 56 percent in 2022. The prevalence of severe food insecurity also increased from 4 to 14 percent. The localities with the highest prevalence of food insecurity were Malha (90 percent); Tawila (80 percent) and Kebkabiya (75 percent). Mahla is the locality with the highest level of severe food insecurity in all of Sudan at 59 percent. With a semi-desert climate, North Darfur is prone to droughts and low rainfall. It has a geological system that is unfavourable for groundwater storage. Late rains last year resulted in crop failure and poor harvest in the 2021/22 season. Sorghum production in the traditional rainfed sector was 90 percent below the five-year average (6,000 tons compared to 61,000 tons).²⁰ The reliance on crops as main income source thus decreased from 39 percent in 2021 to 18 percent in 2022. The prevalence of food-based coping strategies increased by 22 percent (from 23 to 45 percent) and livelihood-based coping strategies by 28 percent (from 45 to 75 percent). Food intake worsened, with the prevalence of inadequate food consumption increasing by 10 percent (from 29 to 39 percent) compared to one year ago. All indicators suggest a deteriorating food security situation in North Darfur, which is further compounded by intercommunal violence, conflict and insecurity.

South Darfur: The level of food insecurity in South Darfur increased by 8 percent, from 30 percent in 2021 to 38 percent in 2022. The prevalence of severe food insecurity also increased from 3 to 7 percent. The localities with the highest prevalence of food insecurity are East Jabel Marra (64 percent); Gerida (53 percent); and Shataia (47 percent). Shataia and Biebel are the localities with the highest level of severe food insecurity at 19 percent. Shataia is also the locality that experienced the biggest increase in food insecurity between 2021 and 2022 in Sudan, from 2 to 47 percent. Dry spells during the 2021 rainy season in 11 out of 21 localities induced a poor harvest, which is a key factor in the worsening food security. Sorghum production in the traditional rainfed sector in the 2021/22 season was 16 percent below the five-year average (306,000 tons compared to 402,000 tons).²¹ Reliance on firewood and charcoal collection as primary income source increased from 1 to 13 percent, indicating increased vulnerability. South Darfur has also suffered from being on the front-line of ethnic and communal warfare, which has resulted in significant losses of livestock through theft and raiding, as well as destruction of livelihoods. The prevalence of food-based coping strategies increased by 14 percent (from 8 to 22 percent) and livelihood-based coping strategies by 23 percent (from 38 to 61 percent). Food intake worsened, with the prevalence of inadequate food consumption increasing by 6 percent (from 22 to 28 percent) compared to one year ago. These factors underpin the worsening food security situation in South Darfur.

West Darfur: The level of food insecurity in West Darfur increased by 14 percent from 51 percent in 2021 to 65 percent in 2022. West Darfur is thus the state with the highest level of food insecurity in Sudan. The prevalence of severe food insecurity also increased from 5 to 15 percent. The localities with the highest prevalence of food insecurity are Kerenik (90 percent, also the site of the deadly April 2022 clashes); Bida (84 percent); and Sirba (77 percent). Bida also has the highest prevalence of severe food insecurity at 28 percent. The security situation in West Darfur is volatile, and the state has been affected by intercommunal and ethnic conflicts resulting in over 323,000 internally displaced persons²² and loss of property, livelihoods and lives. Pastoralists moving their herds to Central Darfur due to conflict caused damage to crops in some areas along their routes, which negatively impacted agricultural production. The harvest in West Darfur was poor, with sorghum production in the traditional rainfed sector in the 2021/22

²⁰ 2021 Crop and Food Supply Assessment Mission (CFSAM) To Sudan

²¹ i.b.

²² OCHA: West Darfur State Profile, link: <https://reliefweb.int/report/sudan/sudan-west-darfur-state-profile-updated-march-2022>

season 61 percent below the five-year average (88,000 tons compared to 223,000 tons).²³ The poor harvest caused a shift in primary livelihood activities, from agricultural wage labour, which declined from 10 to 5 percent, to non-agricultural wage labour, which increased from 18 to 30 percent. The prevalence of food-based coping strategies increased by 12 percent (from 38 to 50 percent) and livelihood-based coping strategies by 14 percent (from 53 to 67 percent). Food intake also worsened, with the prevalence of inadequate food consumption increasing by 14 percent (from 48 to 62 percent) compared to one year ago. These factors underpin the worsening food security situation in West Darfur.

Central Darfur: The level of food insecurity in Central Darfur increased by 16 percent, from 43 percent in 2021 to 59 percent in 2022. The prevalence of severe food insecurity also increased from 5 to 14 percent. The localities with the highest prevalence of food insecurity are North Jabel Marra – Rokero (73 percent); Bindisi (68 percent); and Central Jabel Marra – Golo (67 percent). Bindisi also has the highest level of severe food insecurity at 21 percent. Central Darfur has experienced multiple conflicts and violent episodes, resulting in the destruction of farms and other livelihoods and triggering displacement. The harvest in Central Darfur was poor, with sorghum production in the traditional rainfed sector in the 2021/22 season 26 percent below the five-year average (129,000 tons compared to 175,000 tons).²⁴ The poor harvest caused a shift from agricultural wage labour, which declined from 13 to 5 percent, to non-agricultural wage labour, which increased from 12 to 22 percent. Reliance on crops as primary income source also decreased from 25 to 16 percent. The prevalence of households that rely on firewood and charcoal collection doubled from 4 to 8 percent, indicating increased vulnerability. The prevalence of food-based coping strategies increased by 32 percent (from 27 to 59 percent) and livelihood-based coping strategies by 33 percent (from 34 to 67 percent). In addition, food intake worsened, with the prevalence of inadequate food consumption increasing by 11 percent (from 42 to 53 percent) compared to one year ago. These indicators highlight the worsening food security situation in Central Darfur.

East Darfur: The level of food insecurity in East Darfur increased by 7 percent, from 27 percent in 2021 to 34 percent in 2022. The prevalence of severe food insecurity also increased from 2 to 6 percent. The localities with the highest prevalence of food insecurity are Yassien (58 percent); Asslaya (42 percent); and Adila and Abu Karinka (both at 36 percent). Yassien also has the highest level of severe food insecurity at 17 percent. East Darfur has experienced armed attacks and violence against civilians, and the state has also become the home for large numbers of displaced people from other states in Darfur. The harvest in East Darfur was poor, with sorghum production in the traditional rainfed sector in the 2021/22 season 23 percent below the five-year average (178,400 tons compared to 232,000 tons).²⁵ This is alarming as 47 percent rely on crops as their main income source. The prevalence of food-based coping strategies increased by 11 percent (from 27 to 38 percent). Food intake also worsened, with the prevalence of inadequate food consumption increasing by 12 percent (from 9 to 21 percent) compared to one year ago.

Kassala: The level of food insecurity in Kassala remained at the same level (17 percent) in 2022 compared to 2021. However, multiple localities in Kassala have high levels of food insecurity, such as Hamshkoreeb (39 percent); Rural Kassala (19 percent); and Aroma (19 percent). 7 percent in Hamshkoreeb are severely food insecure. The northern parts of Kassala bordering Red Sea state are considered chronically food insecure. Kassala is vulnerable to recurrent droughts, floods as well as tribal conflicts, and hosts over

²³ 2021 Crop and Food Supply Assessment Mission (CFSAM) To Sudan

²⁴ i.b

²⁵ i.b.

124,000 refugees.²⁶ Due to extended dry spells and poor rainfall, the harvest in Kassala was poor. Sorghum production in the semi-mechanized sector in the 2021/22 season was 79 percent below the five-year average (45,000 tons compared to 213,000 tons). The sorghum harvest in the rain-fed sector was 40 percent below the five-year average. Reliance on non-agricultural wage labour as primary income source thus increased from 22 to 30 percent, which may have provided a cushion for the poor harvest. The prevalence of food-based coping strategies increased by 12 percent (from 34 to 46 percent) and livelihood-based coping strategies by 10 percent (from 36 to 46 percent). Together with the increase in food expenditure share by 3 percent (from 94 to 97 percent), a further widening of the food gap was prevented, but this will likely force households to undermine other essential needs and expose them to future food insecurity.

Red Sea: The level of food insecurity in Red Sea state decreased by 11 percent, from 29 percent in 2021 to 18 percent in 2022. However, multiple localities in Red Sea state have high levels of food insecurity, including Haya (32 percent); Dourdieb (32 percent); and Sinkat (30 percent). Red Sea state is considered chronically food insecure and food intake is chronically poor due to cultural eating practises, resulting in pervasive micronutrient deficiencies and high malnutrition rates. Due to the chronic nature of food insecurity in the state, yearly assessments may not fully capture the reality on the ground. Social norms may also inhibit information sharing during data collection. 18 percent rely on firewood and charcoal collection, a low-return livelihood activity and indicative of a high level of vulnerability. The fact that Red Sea is below the national level in terms of asset ownership is also indicative of chronic vulnerability. While agricultural production in Red Sea is not extensive, with only 1 percent relying on agricultural wage labour as their primary income source, the harvest in Tokar delta was poor, primarily due to extended dry spells. Sorghum production in the traditional rainfed sector in the 2021/22 season was 96 percent below the five-year average (250 tons compared to 6,000 tons).²⁷ However, increased opportunities in the mining sector may have mitigated challenges in the agricultural sector, and provided a relatively stable income for households, evidenced by an improved purchasing power.

Blue Nile: The level of food insecurity in Blue Nile state increased by 19 percent, from 31 percent in 2021 to 50 percent in 2022. The prevalence of severe food insecurity also increased from 5 to 9 percent. The localities with the highest level of food insecurity are Bau (68 percent); Kurmuk (59 percent); and El Tadamon (55 percent). Kurmuk also has the highest level of severe food insecurity at 15 percent. Blue Nile is experiencing an influx of returnees from South Sudan, which is creating land tenure issues when people return to their original areas. Even though sorghum production in the semi-mechanized sector in the 2021/22 season was 31 percent above the five-year average (304,000 tons compared to 232,000 tons), sorghum and millet production in the traditional rainfed sector, which many people rely on, was below the five-year average.²⁸ The reliance of crops thus decreased from 26 to 12 percent. Even though the prevalence of negative food and livelihood-based coping strategies decreased slightly, this was at the expense of a significant deterioration in food intake, with the prevalence of inadequate food consumption increasing by 23 percent (from 19 to 42 percent) compared to one year ago. The prevalence of poor food consumption increased from 4 to 11 percent. Food expenditure share also increased by 6 percent (from 92 to 98 percent spending more than 65 percent of their expenditure on food). This points to a worsening food security situation in Blue Nile.

²⁶ OCHA: Kassala State Profile, link: <https://reliefweb.int/report/sudan/sudan-kassala-state-profile-updated-march-2022>

²⁷ 2021 Crop and Food Supply Assessment Mission (CFSAM) To Sudan

²⁸ i.b.

White Nile: The level of food insecurity in White Nile state increased by 8 percent, from 15 percent in 2021 to 23 percent in 2022. The prevalence of severe food insecurity also increased from 1 to 3 percent. The localities with the highest level of food insecurity are El Salam (33 percent); Guli (31 percent); and Tendalti (27 percent). El Salam also has the highest level of food insecurity at 8 percent. The state hosts approximately 250,000 South Sudanese refugees,²⁹ who are frequently employed as labour. White Nile experienced a poor harvest, with sorghum production in the traditional rainfed sector in the 2021/22 season 67 percent below the five-year average (22,500 tons compared to 68,000 tons).³⁰ In the semi-mechanized sector, sorghum production was 14 percent below the five-year average. While access between key markets within the state and to other states is good, the reduced harvest negatively impacted food security. Formal and informal exports of sorghum and sesame to South Sudan is also rampant, impacting food access and availability. Reliance on salaried work as primary income source decreased from 12 to 7 percent, which increased vulnerability in the state. The prevalence of food-based coping strategies increased by 16 percent (from 29 to 45 percent) and livelihood-based coping strategies by 7 percent (from 38 to 44 percent). These indicators reinforce the worsening food security situation in White Nile.

North Kordofan: The level of food insecurity in North Kordofan decreased by 9 percent, from 39 percent in 2021 to 30 percent in 2022. The prevalence of severe food insecurity also decreased from 7 to 2 percent. The localities with the highest level of food insecurity are Al Rahad (43 percent); Gabrat Al Sheikh (38 percent); and Om Rwaba (33 percent). 4 percent in Sodari and Shikan respectively are severely food insecure. North Kordofan is a drought-prone state, with generally infertile soils and low crop production. The state experienced a poor harvest due to extended dry spells and low rainfall, with sorghum production in the traditional rainfed sector in the 2021/22 season 76 percent below the five-year average (25,400 tons compared to 108,000 tons).³¹ The reliance of agricultural wage labour as main income source thus decreased from 28 percent in 2021 to 15 percent in 2022. Livestock production, mining, trade and herding provide livelihood opportunities. El Obeid is also a major hub for the sale of cereal. These opportunities provide alternative livelihoods, which mitigated challenges in the agricultural sector and improved food security. 30 percent food insecurity is nevertheless a high figure.

West Kordofan: The level of food insecurity in West Kordofan increased by 22 percent, from 21 percent in 2021 to 43 percent in 2022. This is the largest increase in food insecurity of all states compared to the previous round. The prevalence of severe food insecurity increased from 2 to 8 percent. The localities with the highest level of food insecurity are Al Khowai (55 percent); Lagawa (54 percent); and Elsanoot (53 percent). Lagawa also has the highest level of severe food insecurity at 13 percent. Nomadic tribes dominate the population and economy of West Kordofan, and the reliance of livestock as main income source increased from 5 to 8 percent. The harvest in West Kordofan was poor, with sorghum production in the semi-mechanized sector in the 2021/22 season 75 percent below the five-year average (40,000 tons compared to 157,000 tons). In the traditional rainfed sector, sorghum production was 46 percent below the five-year average (47,000 tons compared to 87,000 tons).³² The prevalence of food-based coping strategies increased by 14 percent (from 15 to 29 percent) and livelihood-based coping strategies by 20 percent (from 37 to 57 percent). Food intake also worsened, with the prevalence of inadequate food

²⁹ OCHA: White Nile State Profile, link: <https://reliefweb.int/report/sudan/sudan-white-nile-state-profile-updated-march-2022>

³⁰ 2021 Crop and Food Supply Assessment Mission (CFSAM) To Sudan

³¹ i.b.

³² i.b.

consumption increasing by 8 percent (from 13 to 21 percent) compared to one year ago. In addition, food expenditure share also increased by 7 percent (from 91 to 98 percent spending more than 65 percent of their expenditure on food). All indicators suggest a deteriorating food security situation in West Kordofan.

South Kordofan: The level of food insecurity in South Kordofan increased by 2 percent, from 28 percent in 2021 to 30 percent in 2022. The prevalence of severe food insecurity increased from 3 to 4 percent. The localities with the highest level of food insecurity are Dallami (52 percent); Habilia (45 percent); and Elgoze (44 percent). Elgoze also has the highest level of severe food insecurity at 12 percent. South Kordofan has been at the center of protracted civil conflict and land disputes, with over 270,000 internally displaced peoples and 40,000 South Sudanese refugees.³³ Sorghum production in the semi-mechanized sector in South Kordofan in the 2021/22 season was 32 percent below the five-year average (134,000 tons compared to 196,000 tons).³⁴ Reliance on agricultural wage labour thus decreased from 16 to 12 percent. However, increased opportunities in the mining sector and a small improvement in purchasing power may have limited a further worsening of the food insecurity, which nevertheless remains at a high level.

Gadarif: The level of food insecurity in Gadarif remained at the same level, 22 percent, in both 2022 and 2021. The prevalence of severe food insecurity also stayed at the same level at 2 percent. The localities with the highest level of food insecurity are East Galabat (32 percent); Basonda (32 percent); and El Gerisha (30 percent). Galaa El Nahal has the highest level of severe food insecurity at 6 percent. Although the harvest in Gadarif was slightly worse than previous years, with sorghum production in the semi-mechanized sector in the 2021/22 season 7 percent below the five-year average (914,000 tons compared to 981,000 tons), agricultural production was significantly worse elsewhere in the country. Millet production was also above the five-year average.³⁵ There was a small shift in reliance on agricultural wage labour, which declined from 15 to 11 percent, to non-agricultural wage labour, which increased from 18 to 24 percent. Localized conflict, border tensions, floods and refugee influxes are key drivers of food insecurity in the state. The prevalence of livelihood-based coping strategies increased by 11 percent (from 38 to 49 percent), and food expenditure share increased by 9 percent (from 90 to 99 percent spending more than 65 percent of their expenditure on food) due to rising food prices. Nevertheless, livelihood opportunities in rainfed areas and irrigation schemes, as well as in major urban areas provided a cushion to worsening economic circumstances. The state currently hosts over 77,000 refugees,³⁶ and potential increases from Ethiopia may compound food security challenges.

Khartoum: The level of food insecurity in Khartoum state remained at the same level, 16 percent, in both 2022 and 2021. The prevalence of severe food insecurity declined slightly from 3 to 2 percent. The localities with the highest level of food insecurity are Jabel Awila (28 percent); Omdurman (19 percent) and Khartoum (16 percent). Jabel Awila also has the highest level of severe food insecurity at 8 percent. Khartoum is at the center of supply routes in Sudan. Even though the prevalence of food-based coping strategies increased by 14 percent (from 28 to 42 percent), purchasing power improved significantly, with 49 percent unable to afford the local food basket compared to 99 percent one year ago. The price of the local food basket increased by 58 percent, which is the smallest increase of all states. The increase in daily labour wages offset the increase in food prices, which strengthened purchasing power. Even though market reliance is high in the state, livelihood opportunities, including cash crop production (fruits such

³³ OCHA: South Kordofan State Profile, link: <https://reliefweb.int/report/sudan/sudan-south-kordofan-state-profile-updated-march-2022>

³⁴ 2021 Crop and Food Supply Assessment Mission (CFSAM) To Sudan

³⁵ i.b.

³⁶ OCHA: Gedaref State Profile, link: <https://reliefweb.int/report/sudan/sudan-gedaref-state-profile-updated-march-2022>

as banana, mango, lemon, and guava), trade, and gold extraction, are more available than other states. The proportion that rely on salaried work, which is a more sustainable livelihood activity, increased from 26 to 39 percent. These factors enabled the food security situation in Khartoum state to remain stable.

Sinnar: The level of food insecurity in Sinnar increased by 19 percent, from 16 percent in 2021 to 35 percent in 2022. The prevalence of severe food insecurity increased from 0 to 4 percent. The localities with the highest level of food insecurity are Aldali (47 percent); Dinder (40 percent); and Abohugar (35 percent). Sinnar locality has the highest level of severe food insecurity at 7 percent. Sinnar, a high agricultural-production state, experienced a poor harvest due to heavy floods that hit the state in mid-2021. Sorghum production in the traditional rainfed sector in the 2021/22 season was 75 percent below the five-year average (27,000 tons compared to 106,000 tons).³⁷ The reliance on crops as main income source thus decreased from 28 percent in 2021 to 15 percent in 2022. Furthermore, sorghum production in the semi-mechanized sector was 71 percent below the five-year average (104,000 tons compared to 364,00 tons).³⁸ The prevalence of livelihood-based coping strategies increased by 10 percent (from 47 to 57 percent). Food intake worsened, with the prevalence of inadequate food consumption increasing by 13 percent (from 6 to 19 percent) compared to one year ago. Food expenditure share also increased by 6 percent (from 91 to 96 percent spending more than 65 percent of their expenditure on food). In sum, the below-average sorghum production in the irrigated, semi-mechanized and rainfed sectors, has driven the deterioration in food security in Sinnar, as both food availability and livelihood opportunities in the critical agricultural sector have been negatively affected.

Northern: The level of food insecurity in Northern remained at the same level, 17 percent, in both 2022 and 2021. The prevalence of severe food insecurity also stayed at the same level at 1 percent. The localities with the highest level of food insecurity are Alborgaig (21 percent); Halfa (20 percent); and Dalgo (19 percent), the latter of which also has the highest level of severe food insecurity at 2 percent. Northern is located in a desert zone and is characterized by low rainfall and sparse vegetation. Purchasing power worsened by 12 percent, with 37 percent unable to afford the local food basket compared to 25 percent one year ago. The price of the local food basket increased by 256 percent compared to 2021, which spurred the worsening purchasing power. Food expenditure share also increased by 7 percent (from 88 to 95 percent spending more than 65 percent of their expenditure on food). However, 19 percent of households depend on salaried work, including fodder production carried out by foreign investors for export. Furthermore, wheat production was in line with the five-year average,³⁹ which allowed the food security situation to remain stable.

Al Gazira: The level of food insecurity in Al Gazira increased by 4 percent, from 12 percent in 2021 to 16 percent in 2022. The prevalence of severe food insecurity increased from 1 to 2 percent. The localities with the highest level of food insecurity are East El Gezira (25 percent); Al Qurashi (21 percent); and South El Gezira (19 percent), the latter of which also has the highest level of severe food insecurity at 5 percent. Al Gazira is a high agricultural-production state, with strong market connections that facilitate the movement of agricultural commodities, particularly sorghum, wheat, and groundnuts. The state experienced a poor harvest however, with sorghum production in the irrigated sector in the 2021/22 season 40 percent below the five-year average (177,000 tons compared to 297,000 tons).⁴⁰ Wheat

³⁷ 2021 Crop and Food Supply Assessment Mission (CFSAM) To Sudan

³⁸ i.b.

³⁹ i.b.

⁴⁰ i.b.

production was 19 percent below the five-year average (297,000 tons compared to 367,000 tons). The reliance of agricultural wage labour as a main income source thus decreased from 22 percent in 2021 to 15 percent in 2022. This is a key factor in the increased food insecurity in Al Gazira, as purchasing power also worsened by 9 percent, with 27 percent unable to afford the local food basket compared to 18 percent one year ago. The price of the local food basket increased by 208 percent compared to one year ago. Food expenditure share increased by 9 percent (from 87 to 96 percent spending more than 65 percent of their expenditure on food). On the other hand, sorghum production in the rain-fed sector was 66 percent above the five-year average, and consequently crops increased as primary livelihood activity from 11 to 17 percent. This likely mitigated the impact on food security.

River Nile: The level of food insecurity in River Nile state increased by 1 percent, from 8 percent in 2021 to 9 percent in 2022. The prevalence of severe food insecurity stayed at the same level (0 percent). The localities with the highest level of food insecurity are Shendi (20 percent); El Matamma (14 percent); and Ad Damar (11 percent). The latter two of these localities, as well as Atbara, have 1 percent that are severely food insecure. River Nile is the state with the largest increase in the price of the local food basket (257 percent) compared to last year. Purchasing power thus worsened by 15 percent, with 50 percent unable to afford the local food basket compared to 35 percent one year ago. However, sorghum production in the irrigated sector in the 2021/22 season was 163 percent above the five-year average (105,000 tons compared to 40,000 tons).⁴¹ Reliance on mining as primary income source doubled from 6 to 12 percent. These factors enabled the food security situation to remain relatively stable.

Table 1: Percentage of food insecurity by state in Q1 2021 and Q1 2022

State	Percentage of food insecure households (%)		Change compared to the previous round (%)
	Q1 2021	Q1 2022	
North Darfur	38%	56%	↑18%
South Darfur	30%	38%	↑8%
West Darfur	51%	65%	↑14%
Central Darfur	43%	59%	↑16%
East Darfur	27%	34%	↑7%
Kassala	17%	17%	↔0%
Red Sea	29%	18%	↓-11%
Blue Nile	31%	50%	↑19%
White Nile	15%	23%	↑8%
North Kordofan	39%	30%	↓-9%
West Kordofan	21%	43%	↑22%
South Kordofan	28%	30%	↑2%
Gadarif	22%	22%	↔0%
Khartoum	16%	16%	↔0%
Sinnar	16%	35%	↑19%

⁴¹ 2021 Crop and Food Supply Assessment Mission (CFSAM) To Sudan

Northern	17%	17%	↔0%
Al Gazira	12%	16%	↑4%
River Nile	8%	9%	↑1%
Sudan	27%	34%	↑7%

Table below is the list of localities with the highest prevalence of food insecurity (above 50 percent). See full table with all localities in Annex 2.

Table 2: Localities with above 50 percent food insecurity

State	Locality	Food insecure (CARI)	Severely food insecure
West Darfur	Kerenik	90%	19%
North Darfur	Malha	90%	59%
West Darfur	Bida	84%	28%
North Darfur	Tawila	80%	11%
West Darfur	Sirba	77%	13%
North Darfur	Kebkabiya	75%	23%
North Darfur	Umkedada	73%	24%
West Darfur	Jebel Moon	73%	24%
Central Darfur	North Jabel Marra (Rokero)	73%	20%
Central Darfur	Bindisi	68%	21%
Blue Nile	Bau	68%	11%
Central Darfur	Central Jabel Marra (Golo)	67%	15%
West Darfur	Habila	67%	14%
North Darfur	Kuma	66%	18%
North Darfur	Saraf Omra	65%	21%
South Darfur	East Jabel Marra	64%	4%
Blue Nile	Kurmuk	59%	15%
Central Darfur	Azoom	58%	14%
East Darfur	Yassien	58%	17%
Central Darfur	Um Dukhon	57%	9%
North Darfur	El serief	56%	8%
North Darfur	Kornoi	55%	10%
Blue Nile	EL Tadamon	55%	10%
West Kordofan	Al Khowai	55%	10%
Central Darfur	Wadi Salih	54%	16%
West Kordofan	Lagawa	54%	13%
South Darfur	Gerida	53%	8%
North Darfur	El Fasher	53%	8%
West Kordofan	Elsanoot	53%	10%

North Darfur	Um Buru	53%	5%
Central Darfur	Mukjar	53%	7%
South Kordofan	Dallami	52%	8%
Central Darfur	West Jabel Marra	52%	7%
North Darfur	Kutum	51%	5%

Profile of Food Insecure Population

Gender and education

Food insecurity is gendered. Households headed by women were more food insecure than households headed by men.⁴² 42 percent of the female-headed households are food insecure, as opposed to 31 percent of their counterparts. Of this, 9 percent of female-headed households are severely food insecure, while the figure stands at 5 percent for male-headed households. The states with the highest prevalence of food insecure female-headed households are West Darfur (72 percent), Central Darfur (63 percent) and North Darfur (61 percent).

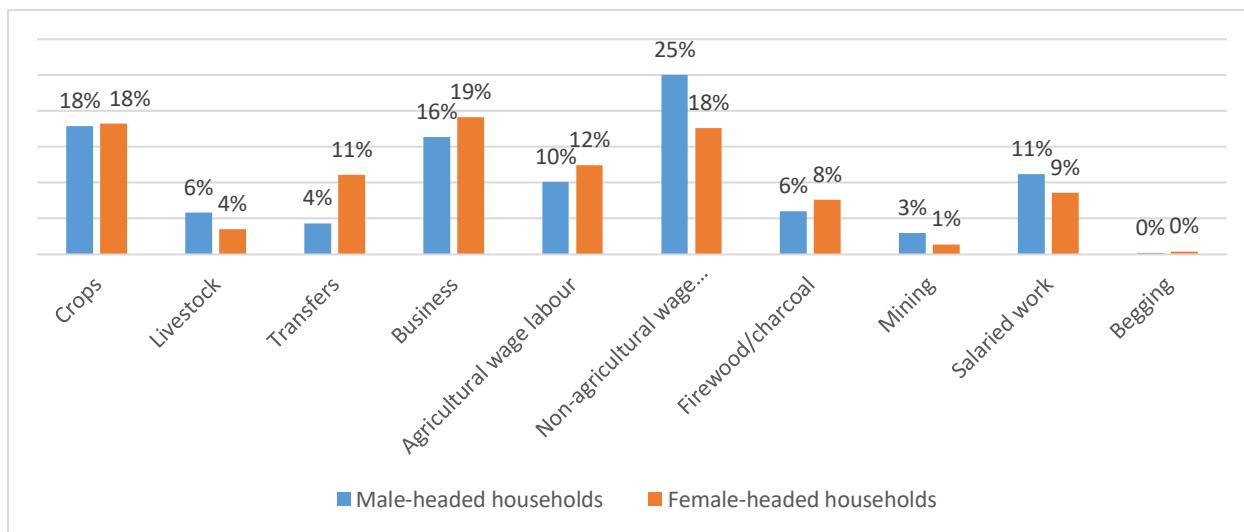
Female-headed households also have worse food intake compared to males. 33 percent of female-headed households have inadequate food consumption, while 20 percent of male-headed households have inadequate food consumption. The prevalence of poor food consumption is double the rate for female-headed households (10 percent) compared to male-headed households.

Overall, the main income sources for the female-headed and male-headed households vary depending on gender. Male-headed households tend to engage in longer term and higher return livelihood activities such as salaried work, mining and non-agricultural wage labor compared to females. Households that rely on these activities as their primary income source are also more food secure. In the meanwhile, female-headed households rely, to a greater extent, on informal transfers, such as remittances. 11 percent of female-headed households relied on informal transfers such as remittances, which is three times the prevalence observed in male-headed households (4 percent). Limited and less sustainable livelihood opportunities, rooted in socioeconomic and political inequality and low levels of literacy, is thus a key obstacle that women face which impedes them from meeting their food security needs.

Household heads with a lower level of education were more food insecure.⁴³ 42 percent of those with no education and 33 percent of those with only primary education were food insecure. Household heads that had a secondary or university education were less food insecure.

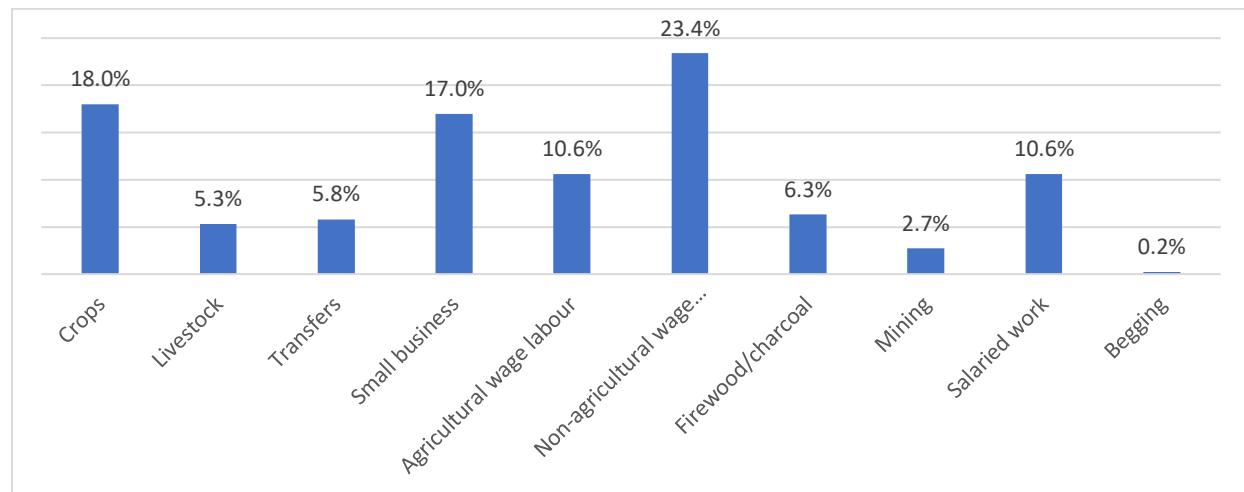
⁴² According to the CFSVA, 78 percent of households are headed by males and 22 percent are headed by females.

⁴³ According to the CFSVA, 34 percent of household heads have no education, 44 percent have primary education as their highest level of education, 16 percent have secondary education as their highest level of education, and 6 percent have university education as their highest level of education.

Figure 4: Primary income source of male-headed and female-headed households


Livelihoods activities and assets

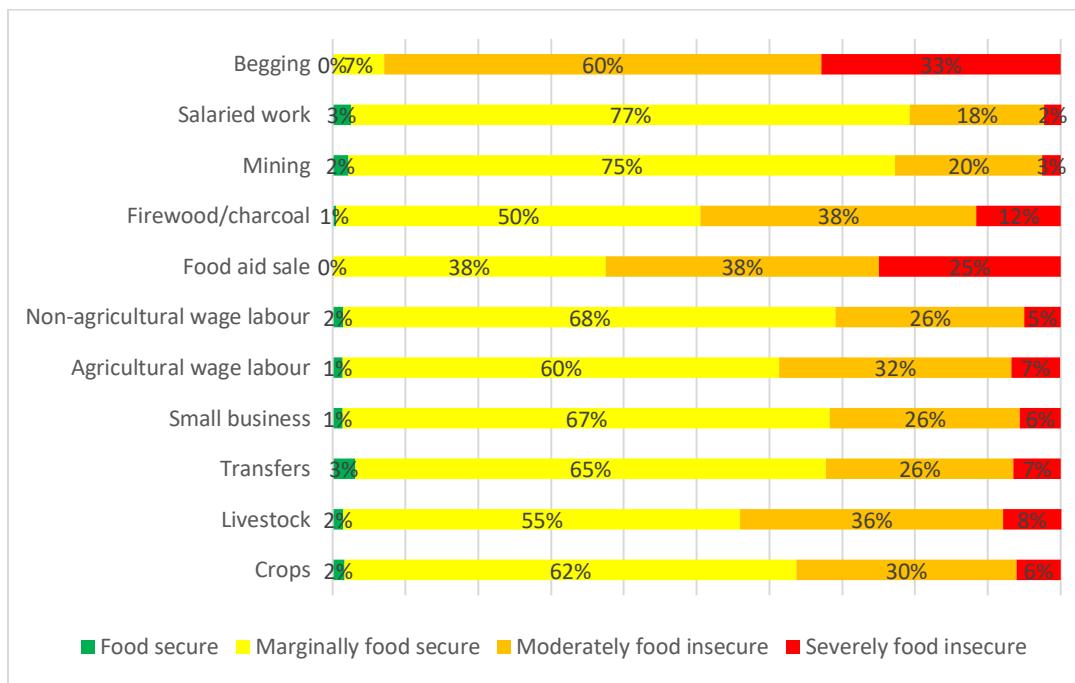
The main income source was non-agricultural wage labour (which includes raksha, labour, wheelbarrow or working as porter). 23.4 percent rely on these activities as their primary income source. This is followed by crops, which 18 percent reported was their main livelihood activity. 17 percent relied on small business, which includes donkey cart work, selling water, tea, handcrafts, or petty trade. 10.6 percent relied on agricultural wage labour and salaried work respectively.

Figure 5: Primary income source


Households that engaged in more sustainable and high return livelihood activities such as salaried work, mining and non-agricultural wage labour were the most food secure. 79 percent of households with salaried work, 77 percent of households with mining and 69 percent of households with non-agricultural wage labour as their main income source were food secure. Households with begging, food aid sale and firewood/ charcoal collection as their main source of income were the most vulnerable group. 93 percent of households with begging, 63 percent of households with food aid sale and 50 percent of households

with firewood/ charcoal collection as their main income source were food insecure. Firewood and charcoal collection are also associated with negative long-term environmental implications.

Figure 6: Prevalence of food insecurity by livelihood type



Households that owned certain physical assets, such as a cell phone, bicycle, motorcycle, car, radio, TV, and jewellery/ watch, were less food insecure compared to households that did not own them.

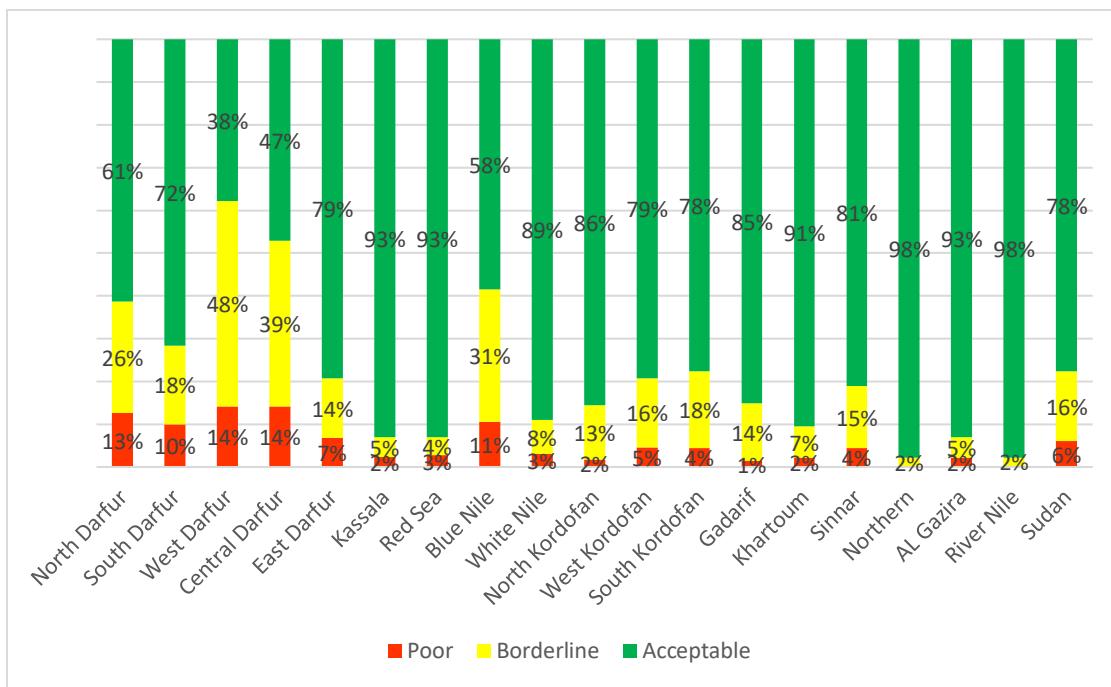
Adequacy of Food Consumption

The Food Consumption Score (FCS) is a composite indicator that considers the dietary diversity, food frequency and relative nutritional importance of different food groups consumed at the household level a week prior to the survey.⁴⁴ It is a proxy of households' food access and a core WFP indicator used to classify households into different food consumption groups (poor consumption, borderline consumption, and acceptable consumption).

In Sudan, 78 percent of resident households had acceptable food consumption. 16 percent had borderline food consumption and 6 percent had poor food consumption. This is a worsening in food intake by 5 percent compared to one year ago.⁴⁵ West Darfur and Central Darfur had the highest prevalence of households with poor food consumption (14 percent), followed by North Darfur (13 percent), and Blue Nile (11 percent).

⁴⁴ Food items are grouped into eight standard food groups with a maximum value of seven days per week. The consumption frequency of each food group is multiplied by an assigned weight based on its nutrient content, and those values are then summed to deliver the food consumption score.

⁴⁵ In 2021, 83 percent of resident households had acceptable food consumption, 14 percent had borderline food consumption and 4 percent had poor food consumption.

Figure 7: Food consumption group by state


Most states have experienced a decrease in the mean food consumption score, which indicates worsening food intake. The mean food consumption score decreased the most in Blue Nile (19 percent); Sinnar (16 percent); Khartoum (13 percent) and West Darfur (13 percent).

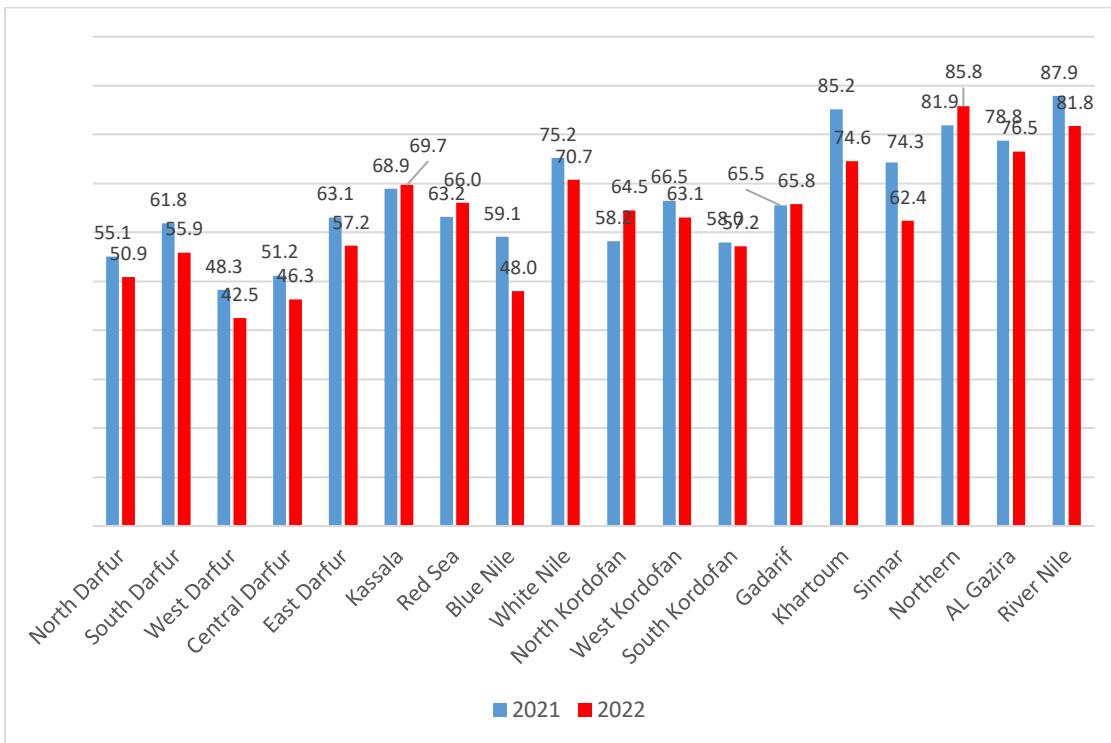
Figure 8: Food consumption score by state


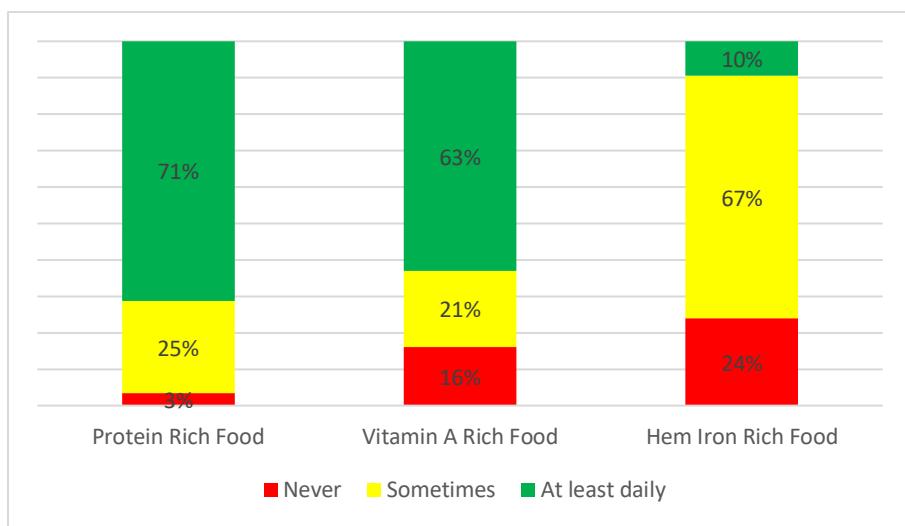
Table 3: Change in Food Consumption Score by state

State	Change in FCS (%)
North Darfur	⬇️ -8%
South Darfur	⬇️ -10%
West Darfur	⬇️ -12%
Central Darfur	⬇️ -10%
East Darfur	⬇️ -9%
Kassala	⬆️ 1%
Red Sea	⬆️ 4%
Blue Nile	⬇️ -19%
White Nile	⬇️ -6%
North Kordofan	⬆️ 11%
West Kordofan	⬇️ -5%
South Kordofan	⬇️ -1%
Gadarif	⬆️ 1%
Khartoum	⬇️ -13%
Sinnar	⬇️ -16%
Northern	⬆️ 5%
AL Gazira	⬇️ -3%
River Nile	⬇️ -7%

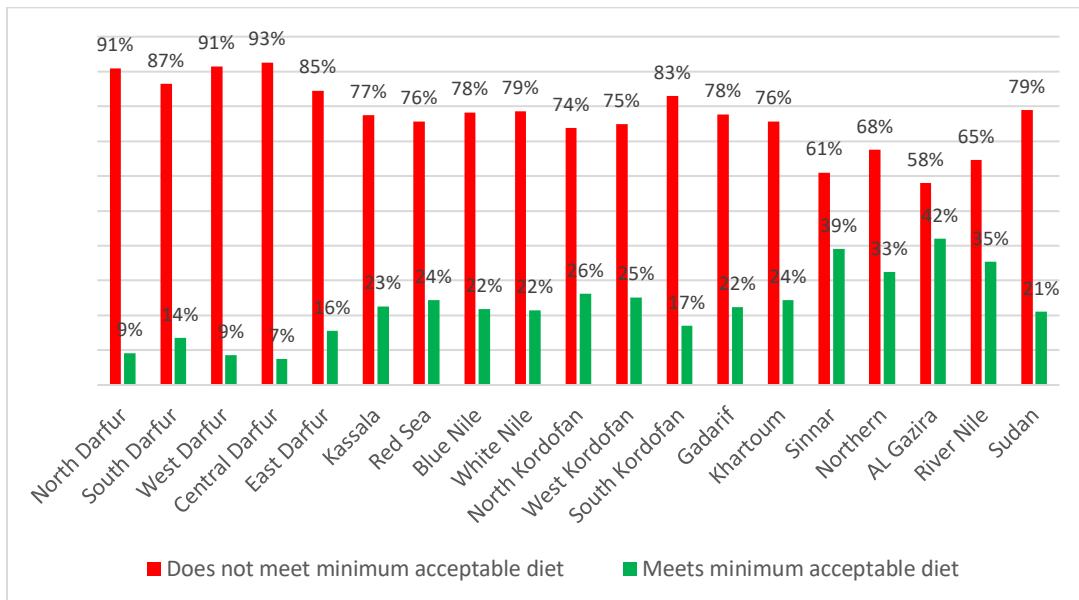
The Food Consumption Score-Nutrition (FCS-N) takes a closer look at the consumption of protein rich, iron rich and vitamin A rich foods. Protein plays a key role in child growth and is crucial for the prevention of wasting as well as stunting which takes place largely within the first 1,000 days. Iron deficiency is one of the main causes of anemia which affects approximately 25 percent of the world's population, mainly pre-school children and women. Vitamin A deficiency, if not tackled before the age of five, can increase child mortality and infectious diseases such as measles, diarrhea, and malaria by up to 30 percent.

The FCS-N results show low consumption of vitamin A rich foods, as 16 percent do not consume food rich in vitamin A. Furthermore, 24 percent of resident households never consume food that is rich in hem-iron. The prevalence of households who never consume food rich in protein and hem iron has increased compared to one year ago.⁴⁶

⁴⁶ According to the 2021 CFSVA, 2 percent never consumed food rich in protein and 15 percent never consumed food that is rich in hem iron.

Figure 9: FCS-N⁴⁷


The Minimum Dietary Diversity for Women (MDD-W) is a dichotomous indicator whether women aged 15-49 have consumed at least five out of ten defined food groups⁴⁸ the previous day or night.⁴⁹ This is a proxy indicator to reflect the micronutrient adequacy of women's diets. The results showed that in all states, most women do not meet the minimum acceptable diet, which indicates intra household disparity between male and female members in terms of food intake. 79 percent of women do not meet the minimum acceptable diet. The situation is particularly dire in Central, West and North Darfur, where over 90 percent of women do not meet the minimum acceptable diet.

Figure 10: Minimum Dietary Diversity (MDD-W) for Women in Sudan


⁴⁷ The recall period is 7 days. Never = 0 days; sometimes = 1 - 6 days; and at least daily = 7 days.

⁴⁸ These food groups are grains, white roots and tubers, and plantains; pulses (beans, peas and lentils); nuts and seeds; dairy; meat, poultry and fish; eggs; dark green leafy vegetables; other vitamin A-rich fruits and vegetables; other vegetables; other fruits

⁴⁹ Food and Agriculture Organization, link: <http://www.fao.org/3/a-i5486e.pdf>

Sources of Food

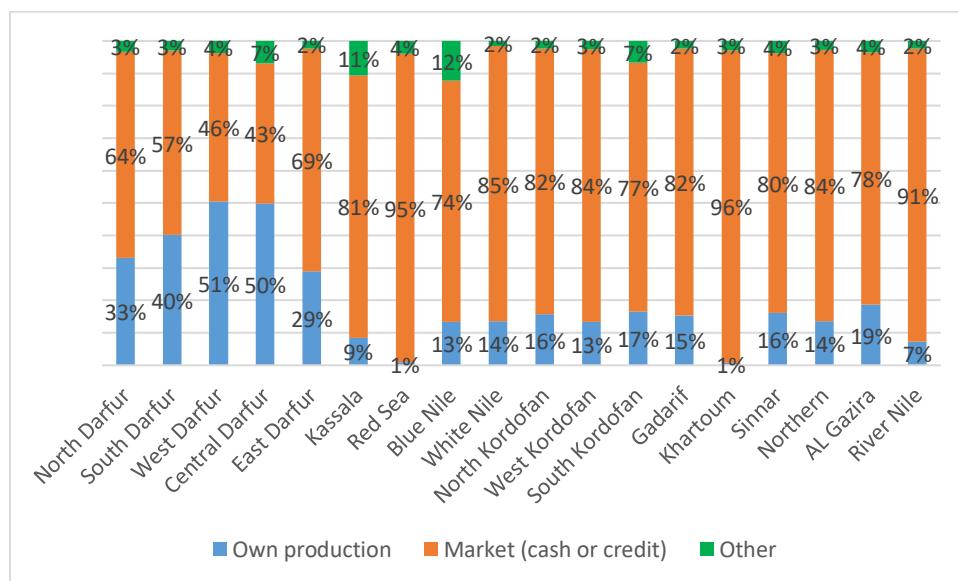
Although the sources of food varied by the commodity, high market reliance was observed. About one-fifth of households obtained cereals through their own production in Q1 2022, which is a slight reduction from last year, possibly due to the poor harvest and the increasing shift to cash crops. Nearly one-third of households obtained milk and dairy products from their own production, and one-fifth obtained eggs from their own production. For the remaining food groups, including pulses, meat, vegetables, fruits, oil, and sugar, the primary source is markets, indicating high market reliance. This highlights the importance of markets in maintaining adequate and diverse food consumption for households.

Table 4: Sources of food groups

	OWN PRODUCTION	MARKET (CASH)	MARKET (CREDIT)	OTHER ⁵⁰
CEREAL	22%	71%	4%	4%
PULSES	5%	86%	5%	4%
MILK AND DAIRY	29%	65%	4%	3%
MEAT / FISH	1%	96%	2%	2%
EGGS	20%	76%	2%	2%
VEGETABLES	2%	94%	3%	2%
FRUITS	3%	93%	1%	3%
OIL	6%	86%	6%	2%
SUGAR	0%	91%	7%	2%

Market reliance for cereal is highest in Khartoum (96 percent), Red Sea (95 percent), and River Nile (91 percent). These urban households are particularly impacted by rising food prices.

Figure 11: Source of consumed cereal by state



⁵⁰ Other source includes loan, begging, exchanging labour or items for food, gift from family/ relatives, and food aid (from NGOs or WFP).

Local Food Basket

The local food basket in Sudan consists of eight food items that have been identified by focus group interviews with the IDP, refugee and resident population communities based on food preferences, nutritional value and cost minimization. The eight items are sorghum, onion, vegetable oil, milk, cow meat, goat meat, dry tomatoes, and sugar.⁵¹ The prices of these items are combined, according to specific quantities that add up to 2020 kcal, to constitute the local food basket eaten by one person per day. People's ability to buy the local food basket using their own resources is measured as the purchasing power.

The average price of the local food basket in Sudan increased from 138.7 SDG in Q1 2021 to 353.3 SDG in Q1 2022. This is 155 percent higher than the same time last year. States have experienced an increase by varying degrees. In River Nile and Northern, the current price of the local food basket is 256 percent higher compared to one year ago. The increase in the price of the local food basket reflects soaring inflation rates that Sudan has experienced since December 2017. This has contributed to the economic vulnerability of the population which is elaborated in the sections below.

Table 5: Price of Local Food Basket (SDG) in Q1 2021 and Q1 2022 by state

State	Q1 2021 (SDG)	Q1 2022 (SDG)	Change between Q1 2021 & Q1 2022 (%)
North Darfur	143.2	314.5	↑120%
South Darfur	144.3	297.9	↑106%
West Darfur	104.7	292.2	↑179%
Central Darfur	115.4	304.9	↑164%
East Darfur	165.7	347.6	↑110%
Kassala	138.7	419.1	↑202%
Red Sea	163.3	440.1	↑169%
Blue Nile	144.8	299.0	↑107%
White Nile	115.0	277.3	↑141%
North Kordofan	123.3	396.7	↑222%
West Kordofan	121.8	334.1	↑174%
South Kordofan	130.0	355.0	↑173%
Gadarif	107.1	304.1	↑184%
Khartoum	274.6	434.4	↑58%
Sinnar	123.3	297.0	↑141%
Northern	135.9	484.3	↑256%
Al Gazira	124.5	384.1	↑208%
River Nile	152.6	544.2	↑257%
Sudan	138.7	353.3	↑155%

⁵¹ For full table, see Annex 3.

Vulnerability to Food Insecurity

The degree of vulnerability caused by shocks is measured by the negative coping strategies adopted by households. Coping strategies are divided into food and livelihood-based coping strategies.

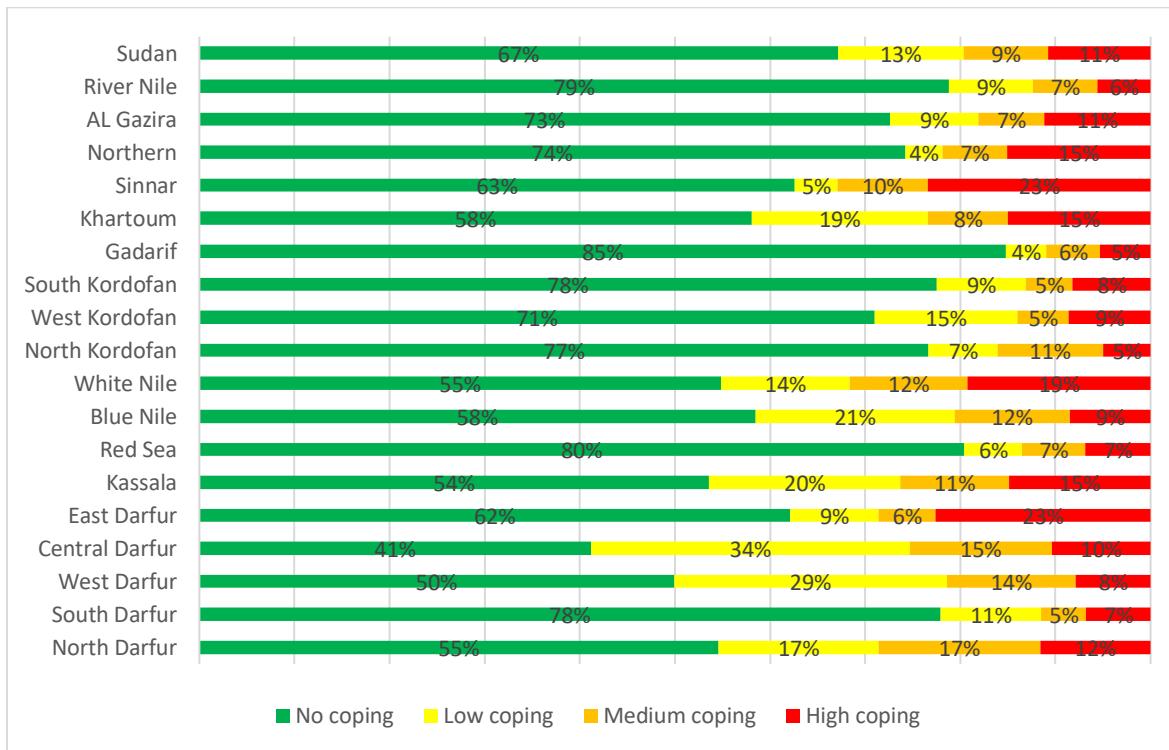
Food-based coping strategies

Food-based coping strategies (also referred to as consumption-based coping strategies, reduced coping strategies index, rCSI) uses a set of coping behaviors to show how households manage or cope with shortfalls in food consumption. Data is collected on the frequency of specific coping behaviors, with a recall period of 7 days, and the severity of those strategies, which is combined in a single score, the coping strategies index. This is an indicator of a household's food security status, where a higher score indicates a greater level of coping, and hence increased food insecurity. A coping strategy index score above 11 indicates a high level of coping. A score between 6 and 11 indicates a medium level of coping, while a score below 6 indicates a low level of coping. The indicator is tailored to the local context.

Overall, one-third of the surveyed households had to adopt negative food-based coping mechanisms due to lack of food or money to buy food. This is an increase of 7 percent from one year ago, when 26 percent adopted negative food-based coping mechanisms. Among them, 11 percent of households employed a high level of negative food-based coping mechanisms.

In Central Darfur, 59 percent of the households adopted food-based coping strategies, the highest among the 18 surveyed states. This was followed by the West Darfur (50 percent), Kassala (46 percent) and North Darfur (45 percent). The adoption of a high level of coping mechanisms was most prevalent in Sinnar and East Darfur (23 percent respectively), followed by White Nile (19 percent) and Northern, Khartoum and Kassala (15 percent respectively).

Figure 12: Prevalence of negative food-based coping strategies by state



The most common food-based coping strategy was to rely on less preferred or less expensive food, with 26 percent of households resorting to this negative coping strategy. It was followed by eating borrowed food or borrowing money to purchase food (19 percent) and reducing the number of meals eaten in a day (16 percent).

Table 6: Most common food-based coping strategies

FOOD-BASED COPING STRATEGIES	PREVALENCE (%)
RELY ON LESS PREFERRED AND LESS EXPENSIVE FOOD	26%
EAT BORROWED FOOD OR BORROW MONEY TO BUY FOOD	19%
REDUCE NUMBER OF MEALS PER DAY	16%
LIMIT PORTION SIZE OF MEALS	14%
RELY ON HELP FROM FRIENDS AND RELATIVES (MUSAADA)	12%
RESTRICT CONSUMPTION OF ADULTS TO FEED CHILDREN	8%

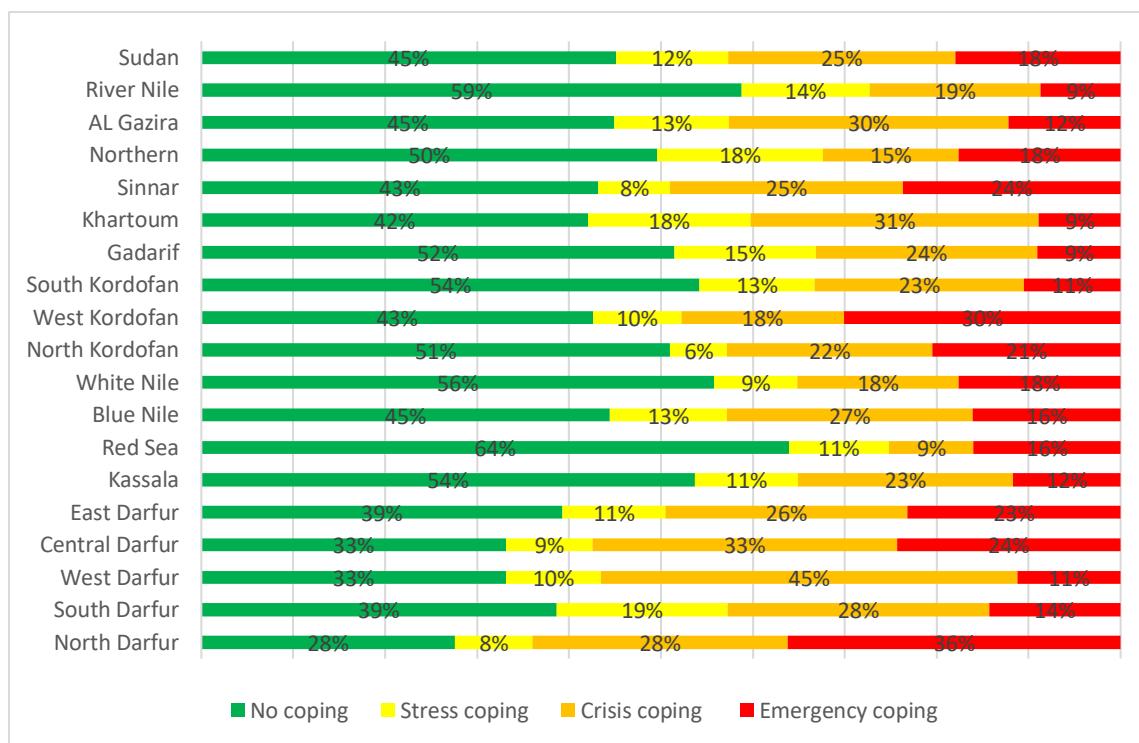
Livelihood-based coping strategies

The livelihood-based coping module is used to understand the medium and longer-term coping capacity of households and if they are able to meet challenges in the future. The recall period is 30 days. Livelihood-based coping strategies are classified as stress, crisis or emergency strategies depending on their severity. Stress strategies indicate a reduced ability to deal with future shocks due to a current reduction in resources or increase in debts (e.g. buying food on credit or spending savings). Crisis strategies directly reduce future productivity, including human capital formation (e.g. selling productive assets). Emergency strategies affect future productivity, are more difficult to reverse and more dramatic in nature (e.g. begging, selling the last female animal).

The results show that 55 percent of resident households had to resort to negative livelihood-based coping strategies. This is an increase of 10 percent compared to one year ago.⁵² 18 percent of households adopted emergency coping strategies, 25 percent adopted crisis coping strategies, and 12 percent adopted stress coping strategies.

72 percent of households in North Darfur adopted livelihood-based coping strategies, the highest in Sudan. This was followed by 67 percent of households in West Darfur and Central Darfur, and 61 percent in South Darfur and East Darfur. The state with the highest prevalence of households adopting emergency coping mechanisms was North Darfur (36 percent), followed by West Kordofan (30 percent), Central Darfur and Sinnar (both 24 percent).

⁵² According to the 2021 CFSVA, 45 percent of resident households had to resort to negative livelihood-based coping strategies.

Figure 13: Prevalence of negative livelihood-based coping strategies by state


The most prevalent strategy was spending savings on food, employed by 21 percent of households. 20 percent of households were forced to cut down on medical expenses, and 11 percent had to sell their last remaining female animals prompting an irreversible loss of livelihoods.

Table 7: Most common livelihood-based coping strategies

LIVELIHOOD COPING	YES (%)	NO, BECAUSE STRATEGY EXHAUSTED OR ASSET DEPLETED ⁵³ (%)
SPENT SAVINGS	21%	4%
REDUCED NON-FOOD EXPENSES ON HEALTH	20%	9%
SOLD LAST FEMALE ANIMAL	11%	4%
SOLD MORE ANIMALS (NON-PRODUCTIVE) THAN USUAL	11%	5%
SOLD HOUSEHOLD ASSETS	8%	2%
WITHDREW CHILDREN FROM SCHOOL	8%	4%
BORROWED MONEY FROM FORMAL LENDER	4%	1%
SOLD PRODUCTIVE ASSETS OR MEANS OF TRANSPORT	5%	1%
SOLD HOUSE OR LAND	2%	1%
BEGGED	1%	1%

⁵³ This means that the household cannot apply the strategy anymore because it has been exhausted or the asset has been depleted.

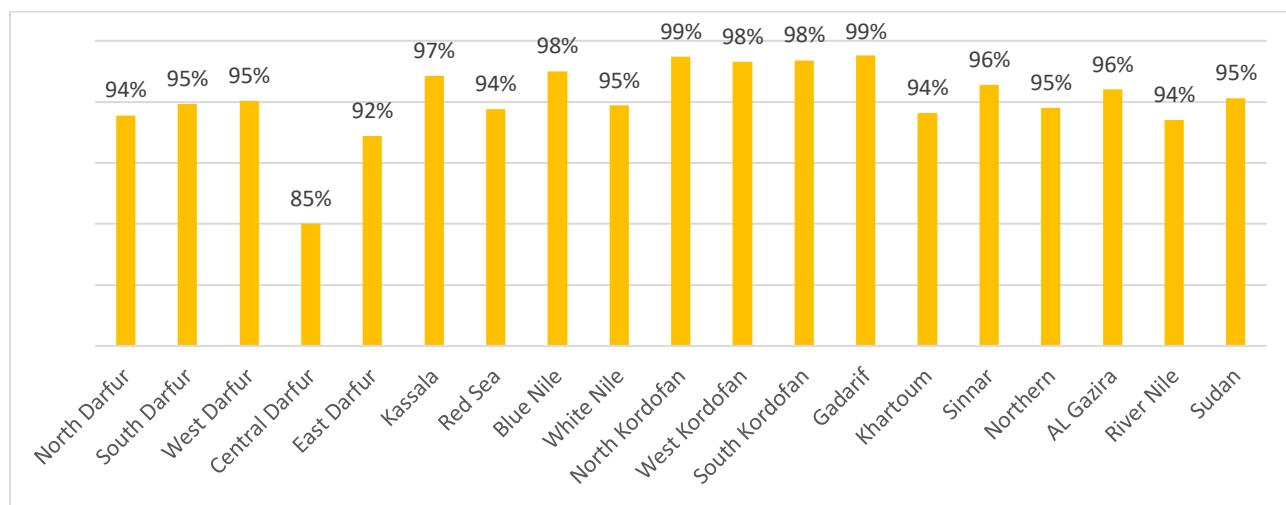
Economic Vulnerability

The CARI console sheds more light on the major driving forces behind household level food insecurity. Across the surveyed population, economic vulnerability remained one of the major reasons behind household food insecurity. Economic vulnerability is measured by expenditure share of food out of total expenditure. This indicator is based on the premise that the greater the importance of food within a household's overall budget (relative to other consumed items or services), the more economically vulnerable the household. If food expenditure share is less than 50 percent, the household is considered to be economically better off, while more than 65 percent is considered to be economically vulnerable, as a large proportion of food expenditure means that households are forced to prioritize immediate short-term food needs over important longer-terms investments in e.g. health care or education.

The share of expenditure spent on food remains high in Sudan. 95 percent of resident households are spending more than 65 percent of their expenditure on food, which is a reflection of high food prices and indicates a high level of economic vulnerability among the Sudanese population. This is an increase of 4 percent compared to the same time last year. The highest food expenditure share was observed in Gadarif and North Kordofan, where 99 percent of households spend more than 65 percent on food. The state with the lowest share of food expenditure was observed in Central Darfur (85 percent).

While such a disproportionate amount of expenditure on food prevented the widening of the food gap in the short-term, it also added more risk factors to an already fragile economic situation and thus exposed them to future protection risks, food insecurity and degradation of their overall well-being. Households were forced to cut on their health and education expenditures and were unable to create or invest in livelihood assets as highlighted by the adoption of livelihood-based coping mechanisms.

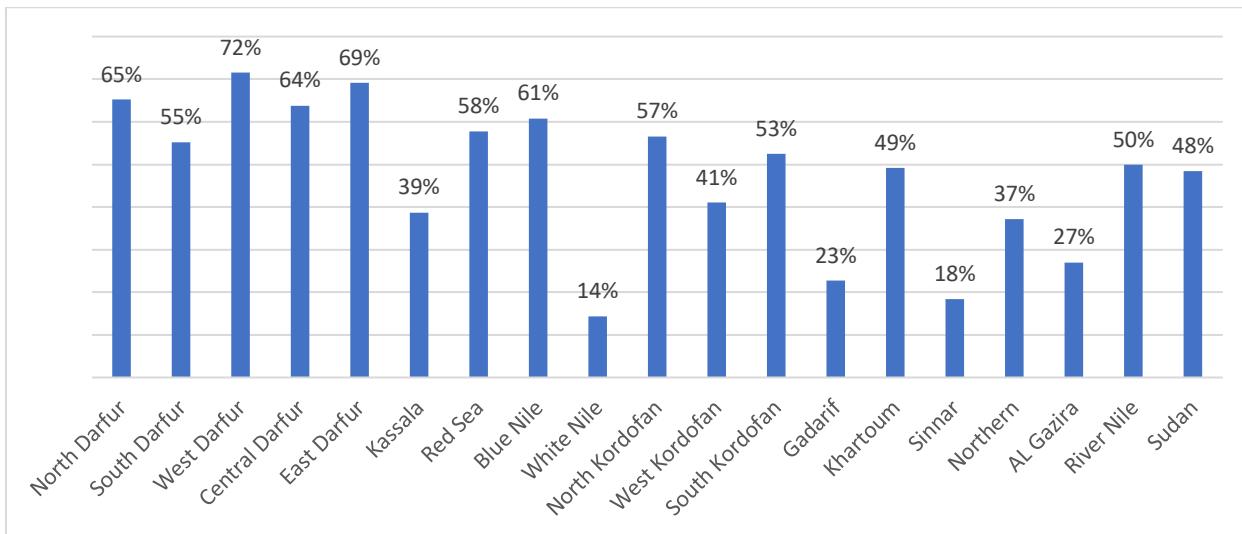
Figure 14: Prevalence of economic vulnerability by state



The persistent increase in food commodity prices has reduced the purchasing power, eroding food security further. 48 percent of residents cannot afford the local food basket, which is a slight improvement compared to the previous round (53 percent) but nevertheless at a high level. According to WFP monthly market monitor, sorghum prices are hitting record levels every month due to inflation and high production costs.

In West Darfur, 72 percent cannot afford the local food basket, which is the highest in the country. This is followed by East Darfur (69 percent), North Darfur (65 percent), Central Darfur (64 percent) and Blue Nile (61 percent).

Figure 15: Prevalence of households that cannot afford one local food basket by state



Conclusion and recommendations

In Sudan, 34 percent of resident households are food insecure during the first quarter of 2022. This amounts to over 15 million people. This is an increase compared to the previous round conducted in the first quarter of 2021, which found that 27 percent of residents households were food insecure. The key causes spurring the increase in food insecurity include worsening food consumption (from 17 to 22 percent of households having inadequate food consumption); increased food expenditure share (from 91 to 95 percent); and increase in prevalence of negative food-based (from 26 to 33 percent) and livelihood-based (from 45 to 55 percent) coping strategies. While the disproportionate amount of expenditure on food prevented a further widening of the food gap in the short term, it also added additional risk factors to an already fragile economic situation, exposing households to future protection risks, food insecurity and degradation of their overall well-being. Households were forced to cut on their health and education expenditures and spend their savings. Furthermore, they were unable to create or invest in livelihood assets as highlighted by the adoption of livelihood-based coping mechanisms.

The coming months (June to September 2022) are the lean season when food security normally deteriorates, as household's food stocks are depleted and livelihood opportunities (especially related to crops, agricultural wage labour, and salaried work) are more limited. In addition, economic decline and inflation, climatic shocks such as floods and droughts, and conflict-induced displacements will contribute to the chronic food and nutrition insecurity. The conflict in Ukraine, with military blockades in the Black Sea disrupting cereal export flows, is unfolding into higher global prices. As Sudan imports over 50 percent of its wheat from the Black Sea region, food access and availability will be negatively impacted, especially when domestic wheat stocks are depleted from July onwards. Increases in the price of fertilizers and fuel will negatively impact the upcoming planting season, as farmers will be unable to afford these crucial agricultural inputs, thereby opting to plant less, adopt cash-crop production, or assume alternative livelihood activities, leading to lower yields and thereby reducing food availability.

While the inflation rate, according to the Sudan Central Bureau of Statistics, has declined in recent months, reaching 220.7 percent in April 2022, and the Sudanese pound has also stabilized, staple food prices are expected to continue to rise. This will augment the high level of economic vulnerability. The political turmoil is also putting Sudan's peace agreement process at risk, creating new displacements and emergencies. An increase in the influx of refugees in Blue Nile, Kassala and Gadarif due to the crisis in the region may also put additional strain on the food security situation. Considering these factors, it is unlikely that the food insecurity situation will improve in the foreseeable future. During the upcoming lean season (June to September), the food security situation is expected to further deteriorate and may reach up to 40 percent (18 million people) of the population that is food insecure by the third quarter of 2022.

To mitigate the high level of food insecurity, the following recommendations are necessary:

- Continue lifesaving support to the most vulnerable populations identified by WFP's CFSVA (2022) and Food Security Monitoring System (FSMS, round 33) surveys;
- Maintain the purchasing power of the beneficiaries that receive cash-based assistance by revising the transfer value in line with market price trends;
- Ensure prevention and treatment of acute malnutrition in emergency and recovery situations, and continuation of behavioural change capacity programmes through nutrition centers in selected areas;
- Create sustainable and stable livelihood opportunities, especially for the most vulnerable groups such as women. On top of poverty and high vulnerability, their purchasing power is further eroded by limited employment opportunities, lack of access to productive resources, as well as the increase and volatility of commodity prices. Schemes such as Productive Safety Nets (PSN) should be prioritized to promote the building or rehabilitation of assets that improve long-term food security and resilience;
- Improve agricultural production and productivity. Supporting the availability of financial services (through the Agricultural Bank of Sudan) and agricultural inputs (such as training, tools, seeds, fertilizers etc.) to small scale producers will promote productivity and generate new employment as well as strengthen food availability. This will help mitigate the impact of poor harvests;
- Reduce food loss. Smallholder farmers lose up to a third of the food they produce due to inadequate storage systems. Post-harvest losses reduce incomes for farmers, exacerbate food insecurity, and have negative impacts on the environment. Land, water, farm inputs and energy are all used to produce food that is not consumed. Initiatives such as WFP's hermetic storage bag and raising awareness among smallholder farmers should continue to be promoted to address the structural lack of storage capacities;
- Invest in productive infrastructure. Productive infrastructures and enhanced food systems are the foundation for economic growth. There are areas in Darfur, South Kordofan, and Blue Nile that cannot be accessed by main transport corridors, which limits the communities' livelihood activities and access to basic services. The "Peace Roads" initiative to connect the areas to the main transport corridors would create income generating opportunities, trade, and more opportunities for people to meet their basic needs. This will also help small farmers connect to functioning markets. Other investments include enhancing the capacity of Agricultural Bank of Sudan, the Strategic Reserve Cooperation, such as increasing storage capacity, and investing in strategic silo system to avoid food shortages.

Annex 1: Methodology

Data collection for the CFSVA takes place once per year during the harvest season and covers 183 localities in all 18 states in Sudan. Household data collection for this round was conducted between January and March 2022. The findings were aimed to be representative of the households at the locality level. The survey design followed a two-stage stratified sample methodology, in which the samples were stratified by the states and localities. Within each locality, 13 locations were randomly chosen as the primary sampling units (PSU) and 16 households were sampled within each location (PSU). On average 207 households were surveyed per locality, amounting to a sample size of 37,579 households.

Indicators

Food insecurity is determined by the WFP corporate indicator, Consolidated Approach to Reporting Indicators of Food Security (CARI). Central to the approach is an explicit classification of households into four descriptive groups: food secure, marginally food secure, moderately food insecure, and severely food insecure. CARI combines a suite of food security indicators, including food consumption score, food expenditure share, and coping strategies, into a summary indicator.

Household food consumption data was collected and analyzed using standard WFP methodology in which the variety and frequency of foods consumed over a 7-day period was recorded to calculate a household food consumption score. Weights were based on the nutritional density of the foods. Using standard thresholds, households were classified as having either poor, borderline or acceptable food consumption. The indicator does not take into consideration the quantity of food consumed.

The local food basket in Sudan consists of eight food items that have been identified through focus group interviews with the IDP, refugee and resident population communities based on food preferences and cost minimization. The eight items are sorghum, onion, vegetable oil, milk, cow meat, goat meat, dry tomatoes and sugar in amounts sufficient to attain a nutritionally acceptable diet, while minimizing the cost. The prices of these items are combined based on specific quantities to constitute the local food basket (see Annex 3).

The coping strategy index is an indicator of household food security about how households manage to cope with a shortfall in food for consumption, and results in a numeric score. Data is collected on the frequency of specific coping behaviors and the severity of those strategies, which is combined in a single score, the coping strategies index. This is thus an indicator of a household's food security status, where a higher score indicates a greater level of coping, and hence increased food insecurity. A coping strategy index score above 11 indicates high coping. A score between 6 and 11 indicates medium coping, while a score between 1 and 6 indicates low coping.

Livelihood-based coping is used to understand longer-term coping capacity of households and if they are able to meet challenges in the future. The recall period is 30 days. Livelihood-based coping strategies are classified as stress, crisis or emergency strategies depending on their severity. Stress strategies indicate a reduced ability to deal with future shocks due to a current reduction in resources or increase in debts (e.g. buying food on credit or spending savings). Crisis strategies directly reduce future productivity, including human capital formation. (e.g. selling productive assets). Emergency strategies affect future productivity but are more difficult to reverse or more dramatic in nature (e.g. begging, selling last female animal).

Economic vulnerability was measured by expenditure share of food out of total expenditure. This indicator is based on the premise that the greater the importance of food within a household's overall budget (relative to other consumed items/services) the more economically vulnerable the household. If food expenditure share is less than 50 percent, the household is considered to be economically better off, while more than 65 percent is considered to be economically vulnerable, as a large proportion of food expenditure means that households are forced to prioritize immediate short-term food needs over important longer-terms investments in e.g. health care or education.

For more information contact Karim Abdelmoneim, Head of Vulnerability Analysis and Mapping (OIC), at karim.abdelmoneim@wfp.org.

Annex 2: List of localities by prevalence of food insecurity

State	Locality	Food insecure (according to CARI, %)	Severely food insecure (%)
West Darfur	Kerenik	90%	19%
North Darfur	Malha	90%	59%
West Darfur	Bida	84%	28%
North Darfur	Tawila	80%	11%
West Darfur	Sirba	77%	13%
North Darfur	Kebkabiya	75%	23%
North Darfur	Umkedada	73%	24%
West Darfur	Jebel Moon	73%	24%
Central Darfur	North Jabel Marra (Rokero)	73%	20%
Central Darfur	Bindisi	68%	21%
Blue Nile	Bau	68%	11%
Central Darfur	Central Jabel Marra (Golo)	67%	15%
West Darfur	Habila	67%	14%
North Darfur	Kuma	66%	18%
North Darfur	Saraf Omra	65%	21%
South Darfur	East Jabel Marra	64%	4%
Blue Nile	Kurmuk	59%	15%
Central Darfur	Azoom	58%	14%
East Darfur	Yassien	58%	17%
Central Darfur	Um Dukhon	57%	9%
North Darfur	El serief	56%	8%
North Darfur	Kornoi	55%	10%
Blue Nile	EL Tadamon	55%	10%
West Kordofan	Al Khowai	55%	10%
Central Darfur	Wadi Salih	54%	16%
West Kordofan	Lagawa	54%	13%

South Darfur	Gerida	53%	8%
North Darfur	El Fasher	53%	8%
West Kordofan	Elsanoot	53%	10%
North Darfur	Um Buru	53%	5%
Central Darfur	Mukjar	53%	7%
South Kordofan	Dallami	52%	8%
Central Darfur	West Jabel Marra	52%	7%
North Darfur	Kutum	51%	5%
Blue Nile	Wad El Mahy	50%	4%
West Darfur	Fur Barnga	48%	5%
North Darfur	Dar El Salam	48%	6%
North Darfur	El Tewiasha	48%	7%
West Kordofan	Abo Zabad	47%	11%
Sinnar	Aldali	47%	6%
South Darfur	Shataia	47%	19%
South Darfur	Kabom	46%	9%
West Kordofan	Al Nuhod	46%	12%
South Darfur	Biebel	46%	19%
West Kordofan	Al Udayya	46%	12%
West Kordofan	Keilak	45%	7%
Blue Nile	El damazine	45%	9%
South Darfur	Um Dafog	45%	12%
South Kordofan	Habila	45%	5%
Central Darfur	Zalengi	44%	14%
West Darfur	EL Genina	44%	11%
South Darfur	EL Sunta	44%	9%
South Darfur	Kass	44%	12%
South Kordofan	Elgoze	44%	12%
North Kordofan	Al rahad	43%	2%
South Darfur	Buram	43%	10%
West Kordofan	Gibeish	42%	4%
Blue Nile	Giessan	42%	4%
East Darfur	Asslaya	42%	6%
West Kordofan	Wad Banda	41%	6%
South Darfur	Reheed EL Berdi	40%	8%
Sinnar	Dinder	40%	4%
West Kordofan	Almayram	40%	6%
Kassala	Hamshkoreeb	39%	7%
West Kordofan	AL Dibub	39%	7%
North Kordofan	Gabrat Al Sheikh	38%	1%
South Darfur	Mershing	38%	2%

South Darfur	EL Salam	37%	2%
North Darfur	Mellit	37%	8%
East Darfur	Adila	36%	10%
West Darfur	Kulbus	36%	9%
South Darfur	Netega	36%	2%
East Darfur	Abu Karinka	36%	9%
Sinnar	Abohugar	35%	3%
South Kordofan	Rashad	34%	2%
Sinnar	Sinja	34%	4%
South Darfur	EL Wihda	34%	3%
South Darfur	ED EL Firsan	34%	6%
Blue Nile	El Rosaries	34%	10%
Sinnar	Sinnar	33%	7%
East Darfur	El Firdos	33%	4%
North Kordofan	Om Rwaba	33%	3%
White Nile	EL Salam	33%	8%
South Kordofan	Elref Elsharig	32%	6%
Gadarif	East Galabat	32%	3%
Red Sea	Haya	32%	4%
Red Sea	Dourdieb	32%	7%
Gadarif	Basonda	32%	4%
West Kordofan	Babanosa	32%	9%
North Kordofan	Sodari	31%	4%
Sinnar	East Sinnar	31%	4%
White Nile	Guli	31%	4%
Red Sea	Sinkat	30%	2%
West Kordofan	Elfoula	30%	3%
Gadarif	El Gerisha	30%	2%
North Darfur	Al lait	29%	1%
South Darfur	Kateela	29%	2%
South Darfur	El Radoom	29%	5%
South Kordofan	Gadir	29%	2%
Khartoum	Jabel Awlia	28%	8%
South Kordofan	El Tadamoon	28%	3%
North Kordofan	Shikan	27%	4%
White Nile	Tendalti	27%	3%
Gadarif	Galaa EL Nahal	27%	6%
Sinnar	Al Suki	27%	3%
South Darfur	Tulus	26%	2%
East Darfur	ED Deain	26%	4%
Gadarif	El Bottana	26%	3%

Red Sea	Gunb/Awlib	26%	1%
West Kordofan	Abyei	26%	3%
North Kordofan	West Bara	25%	1%
East Darfur	Abu Jabra	25%	3%
South Kordofan	Talodi	25%	2%
South Kordofan	Kadugli	25%	5%
AL Gazira	East El Gezira	25%	1%
East Darfur	Bahar EL Arab	24%	2%
North Kordofan	Bara	24%	0%
South Kordofan	Dilling	23%	3%
South Darfur	North Nyala	23%	2%
White Nile	El Dweem	23%	2%
Gadarif	El Garbia	22%	3%
South Kordofan	Al Liri	22%	1%
East Darfur	Shearia	22%	1%
AL Gazira	Al Qurashi	21%	2%
Northern	Alborgaig	21%	1%
North Kordofan	Um Dam	21%	2%
South Kordofan	Abugebiha	21%	2%
Red Sea	Suakein	20%	0%
Northern	Halfa	20%	1%
Gadarif	Gadarif	20%	2%
South Darfur	Dimso	20%	3%
River Nile	Shendi	20%	0%
Khartoum	Om Durman	19%	1%
Northern	Dalgo	19%	2%
AL Gazira	South El Gezira	19%	5%
Gadarif	Central Gadarif	19%	1%
Kassala	Rural Kassala	19%	1%
Kassala	Aroma	19%	1%
White Nile	El Geteena	19%	0%
White Nile	El Jableen	18%	3%
North Darfur	Kalimenda	18%	4%
South Kordofan	Abbasiya	18%	1%
Gadarif	Fau	18%	4%
Kassala	Atbara River	18%	1%
Northern	Merowe	18%	0%
White Nile	Um Rimta	17%	1%
South Kordofan	Abukrshola	17%	1%
AL Gazira	Almanagil	17%	3%
White Nile	Rabak	16%	1%

Khartoum	Khartoum	16%	3%
Kassala	Telkok	16%	1%
AL Gazira	Um AlQura	16%	1%
Khartoum	Karrari	16%	2%
Gadarif	EL Fashga	15%	0%
AL Gazira	Madani Alkobra	15%	3%
South Darfur	South Nyala	15%	1%
Kassala	West Kassala	15%	1%
Kassala	North Delta	15%	1%
Northern	Dongola	14%	1%
Northern	Al Daba	14%	0%
River Nile	El Matamma	14%	1%
Northern	Al Goled	14%	0%
Kassala	Wadelhelio	14%	1%
Kassala	Al Girba	13%	1%
Kassala	Kassala	13%	1%
Red Sea	Tokar	12%	1%
Red Sea	Agig	11%	0%
River Nile	Ad Damar	11%	1%
Gadarif	AL Mafaza	11%	1%
Khartoum	Um Bada	10%	1%
AL Gazira	Al-Hasaheisa	10%	1%
Khartoum	Sharg EL Neel	10%	1%
Gadarif	El Rahad	10%	0%
Khartoum	Bahri	10%	0%
Red Sea	Gabit-Elmadien	8%	0%
River Nile	Atbara	8%	1%
Kassala	Halfa El Jadeeda	8%	1%
Red Sea	Halaib	8%	0%
Red Sea	Port Sudan	7%	0%
AL Gazira	Al Kamlin	7%	1%
River Nile	Abu Hamad	5%	0%
River Nile	El Buhira	5%	0%
River Nile	Berber	3%	0%

Annex 3: WFP's Local Food Basket for Sudan

Elements of the minimum healthy food basket		Sorghum	Onion	US Vegetable oil	Milk	Cow meat	Goat meat	Dry tomatoes	Sugar	Total minimum food basket
Commodity properties	Kcal/100g	335	40	885	68	240	360	258	400	
	g protein/100g	11	1.1	0	3	14.3	20.6	14.1	0	
	g fat/100g	3	0.1	100	4	18	32	3	0	
	g/capita/day	450	50	25	25	5	5	25	40	625
Food basket properties	Kcal/capita/day	1507.5	20	221.3	17	12	18	64.5	160	2020
	% kcal	75%	1%	11%	1%	1%	1%	3%	8%	1
	g protein/capita/day	49.5	0.6	0	0.8	0.7	1	3.5	0	56.1
	g fat/capita/day	13.5	0.1	25	1	0.9	1.6	0.8	0	42.8