CHAD ECONOMIC UPDATE APRIL 2022

Resilience in Uncertain Times: Harnessing Agriculture and Livestock Value Chains

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Cover photo: Fulbert Tchana Tchana

Resilience in Uncertain Times: Harnessing Agriculture and Livestock Value Chains

CHAD ECONOMIC UPDATE[1]

APRIL 2022

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ABBREVIATIONS AND ACRONYMS

Bbl	Barrel
BEAC	Bank of Central African States, *Banque des États de l'Afrique Centrale*
CEMAC	Economic and Monetary Community of Central Africa, *Communauté Économique et Monétaire de l'Afrique Centrale*
CPI	Consumer price index
EASI	Exact Affine Stone Index
ECF	Extended Credit Facility
FAO	Food and Agriculture Organization
FDI	Foreign direct investment
Ha	Hectare
IMF	International Monetary Fund
MOU	Memorandum of understanding
REER	Real effective exchange rate
SDR	Special Drawing Rights
SIGFIP	Integrated Public Finance Management System
WEO	World Economic Outlook

EXECUTIVE SUMMARY

Chad's GDP contracted by 1.2 percent in 2021—the second consecutive year of recession—driven by a two-month suspension of oil production at its Esso plants, economic disruptions due to sociopolitical insecurity, and liquidity constraints because of delays in debt restructuring. As a result, GDP per capita declined by 4.2 percent, on top of the decline of 4.6 percent recorded in 2020. The lingering effect of new waves of COVID-19 cases continued to constrain the full deployment of some public services, while the border with Cameroon (the leading trade channel) remained close in the first half of the year. Agriculture remained the main growth driver in 2021, contributing 1.9 percentage points (ppts) to growth. As containment measures affecting domestic supply chains were lifted, inflation dropped from 3.5 percent in 2020 to 1.0 percent in 2021.

Low oil revenue, coupled with increased spending to deal with shocks, widened the fiscal deficit to 4.3 percent of GDP in 2021. Due to the one-year lag in taxation on oil revenue, the low oil prices in 2020 induced a 33 percent decline in oil revenue. Government expenditure increased by nearly 9 percent in 2021, mainly to strengthen security in the aftermath of President Deby's death in April 2021, quell discontent among civil servants, and improve food security. The mismatch between revenues and spending led to substantial liquidity needs, which were partially covered by the additional International Monetary Fund Special Drawing Rights allocation and borrowings on the regional market.

The 2020 and 2021 economic recessions led to an increase in extreme poverty. Given the rapid growth of the Chadian population of around 3 percent, the two consecutive years of recession led to a sharp contraction of GDP per capita by around 8.8 percent in 2019–21. The extreme poverty rate (measured using US$1.9/day per capita, 2011 PPP) is estimated to have increased by more than 2 ppts by end-2021, equivalent to an additional 400,000 people, increasing the number of extremely poor to 6.2 million. The COVID-19 crisis further impacted the livelihoods of poor and vulnerable households. According to data from high-frequency phone surveys in 2020, two-thirds of households reported a loss in their total household income, 57 percent of households receiving transfers saw a decline in this source of income, and a fifth of households seeking health care were not able to access it.

Despite a buoyant oil market that is projected to lead to a growth recovery in 2022 that is likely to continue into 2023-24 (with the implementation of structural reforms), GDP per capita growth is expected to continue to be negative or relatively modest. Oil prices peaked in 2022Q1, with the Brent's price exceeding US$100/barrel. GDP (both oil and non-oil) is projected to grow by 2.8 percent in 2022 (-0.2 percent in per capita terms). Inflation is expected to accelerate and reach an average of 3 percent in 2022–24. Continuous and relatively high performance in the oil sector would boost the economic recovery in 2023-24, with economic growth reaching an average of 3.7 percent. This outlook assumes a control of the COVID-19 pandemic, the end of the political transition, and the adoption structural reforms, especially in sectors at the core of the Chadian economy such as agriculture and livestock.

The 2022–24 economic recovery is expected to be fragile and subject to significant downside risks related to recurrent and emerging sources of vulnerability. Managing the political transition and related security risks could stress public finances and result in further cuts to critical social services such as health and education. Ongoing climate change contributes to desertification and erratic rainy seasons that reduce agricultural output. Regarding emerging sources of risk, a very low COVID-19 vaccination rate presents a risk of prolonging the pandemic, which could lead to renewed mobility restrictions, and a prolonged debt restructuring process could derail economic reforms. The Russia-Ukraine war is an additional source of risk. Its economic impact would primarily be through higher global food (grain) and energy prices, as Chad's direct trade, investment, remittance, and migration links with Russia and Ukraine are limited. The projections for 2022–24 already reflect a recent sharp increase in oil and gas, agriculture, and metal and mineral prices since January 2022. Still, there is a very high degree of uncertainty related to the conflict and its economic impact. Higher food prices will exacerbate food insecurity challenges, although Chad will benefit from higher oil prices.

With a slow and fragile economic recovery, the adverse effects of the pandemic on poor and vulnerable households are expected to last in the short to medium term. The extreme poverty rate is expected to increase to 38 percent in 2022 due to projected negative GDP per capita growth, while the number of poor will likely increase by an additional 200,000 to 6.4 million. GDP per capita growth is projected to average 0.5 percent in 2022–24, although it is not projected to reach its pre-COVID-19 level over the same period. Continued high food inflation, low coverage of social protection programs, and lack of structural economic transformation will limit the space for poverty reduction. For a material reduction in the absolute number of poor, annual real GDP growth should be significantly above Chad's high population growth. In the meantime, the government should increase the share of social public expenditures to help the poor population and limit the effects of food price increases on poor households. Continued public financial management reforms to improve the efficiency of public spending will be needed given the limited fiscal space. To avoid a lingering COVID-19 pandemic, the government could incentivize vaccination through information campaigns while securing donor support to increase the vaccine supply.

Chad could seize emerging opportunities offered by the political transition, increasing oil prices, and debt restructuring to undertake reforms aimed at renewing its social contract and reducing long-term vulnerabilities. The current political transition, with the embedded national dialogue process, is an important opportunity for political elites to agree on renewing Chad's social contract, including determining what services need to be provided to citizens, how to speed up the developmental agenda, and how to quell conflict between various population groups. The projected oil revenue windfall from high global oil prices offers an opportunity to implement these new commitments. The government should prudently manage the windfall and use the oil stabilization fund as well as relevant fiscal rules to ensure that oil revenues are spent gradually, transparently, and efficiently to the long-term benefit of the population.

Stronger agricultural and livestock value chains are critical to economic diversification, sustainable growth, and food security in the medium to long term. Currently, Chad's cash crop value chains are underdeveloped, and its food crop value chains are very limited. Agricultural productivity remains much lower and has grown more slowly than in other countries with similar agroclimatic conditions. The country's low agricultural productivity is due to a range of on-farm constraints such as an inefficient use of improved seeds and fertilizers, ineffective and under-resourced extension services, and insufficient use of techniques for the sustainable management of natural resources (e.g., land and water). Off-farm constraints such as poorly developed input distribution systems, high transportation costs, and a weak private sector limit availability and increase input costs. While previous government investment in the agriculture sector has been significant, it has only yielded modest results due to the absence of a formal strategy. Climate change has also substantially changed Chad's weather patterns, highlighting the need to develop climate-resilient farming practices and infrastructure.

Livestock is the economy's most important non-oil sector and represents a major income source in the agriculture sector. Chad has around 25 million cattle, 26 million sheep, 30 million goats, and 6 million camels. Livelihoods in rural areas are based primarily on subsistence farming and livestock rearing. Yet, complex livestock value chains and insecurity in the region reduce regional exports, producers' gains, and the competitiveness of Chadian cattle.

The government should take bold actions to strengthen or create agricultural and livestock value chains. Specifically, the authorities should develop national strategies for the most important value chains, incentivize private investment in the sesame and gum arabic value chains, and empower and leverage farmer organizations to increase their role in value chain development. The government should also use global data and analysis to support decision-making and the implementation of agricultural investment projects and policies. For livestock, it should: (i) ensure that exports are unrestricted; (ii) guarantee export price parity for pastoralists selling to slaughterhouses; (iii) enhance veterinary services and goods; (iv) invest in cold chain and temperature-controlled logistics services; and (v) promote the use of quality standards and certification. Moreover, public interventions such as increasing budget allocation to agriculture, improving regulatory mechanisms, refining taxation and tariffs to improve sector competitiveness, and partnering with relevant stakeholders to provide the necessary infrastructure to farmers will be critical to fully exploiting the country's agricultural and livestock potential.

Table 0.1 Policy options to strengthen macro-fiscal sustainability, reduce poverty and vulnerability, and strengthen agriculture and livestock value

Area	Objective	Actions
Chapter 1: Macro-Fiscal Sustainability and Poverty Reduction	Invest in social sectors	• Prioritize health and education spending in the FY22 and FY23 budgets, supporting an increase of physicians, nurses, other medical personnel, medical material, and drugs and ensuring kids stay in school and there is no gender discrimination.
	Ensure food security	• Maintain the food bank created in 2021, stocking it with cereals. • Adopt policies to render agriculture more climate resilient, including to increase the share of irrigated land and enhance the use of water resources.
	Continue public financial management reforms	• Complete the implementation of ASYCUDA World to simplify procedures, optimize controls, and secure custom revenues. • Complete the implementation of the Integrated Public Finance Management System (SIGFIP) to help secure revenues, expenditures, the audit trail, and expenditure transparency.
	Renew the social contract in the ongoing national dialogue	• Agree on which public services should be prioritized. • Agree on how to speed up service delivery.
	Strengthen fiscal and debt sustainability	• Accelerate the completion of debt restructuring efforts under the G20 Common Framework. • Use the stabilization fund at the BEAC to save oil revenue windfall (to be used during economic downturns) and increase the size of the fund if the windfall remains high in 2023.
Chapter 2: Strengthening Agricultural and Livestock Value Chains for Economic Diversification	Strengthen agricultural value chains	• Incentivize private investment in value chains, especially for sesame and gum arabic • Empower and leverage farmer organizations to increase their role in value chain development. • Use global data and analysis to support decision-making and the implementation of agricultural investment projects and policies.
	Strengthen livestock value chains	• Ensure exports are unrestricted. • Guarantee export price parity for pastoralists selling to slaughterhouses. • Enhance veterinary services and goods. • Invest in cold chain and temperature-controlled logistics services. • Promote the use of quality standards and certification.

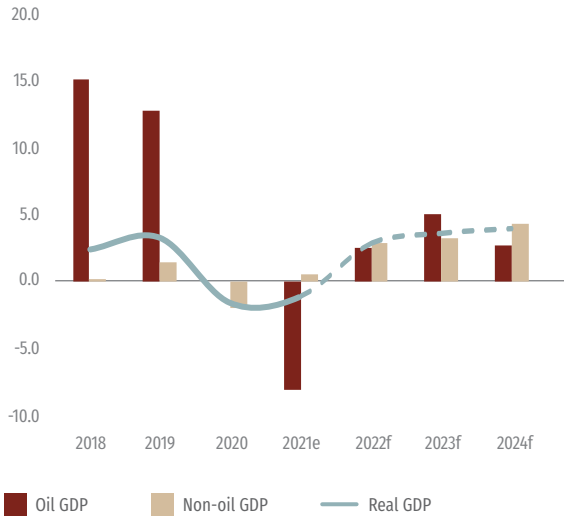
1 MACROECONOMIC AND POVERTY DEVELOPMENTS

1.1 Recent Economic and Poverty Developments

Real sector: A second consecutive year of recession

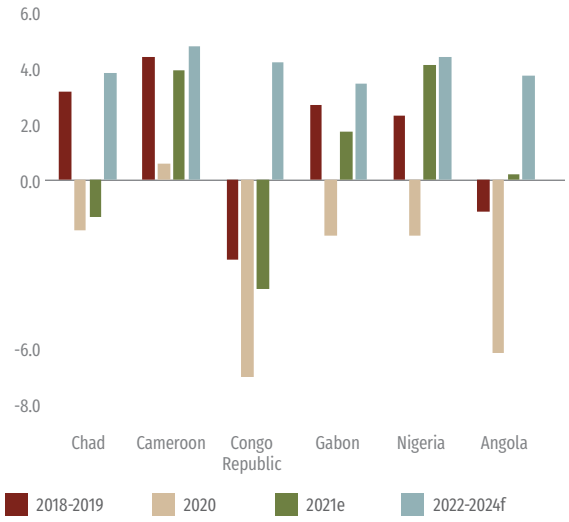
Chad experienced a second consecutive year of recession in 2021. The country has struggled to fully recover since the 2016 recession that followed the oil price shock of 2014-15. In 2020, the COVID-19 pandemic and the related fall in oil prices deeply affected Chad, throwing it off the growth recovery trajectory it had been on since 2018. As a result, the economy contracted by 1.6 percent in the same year (Figure 1.1).[2] In 2021, domestic insecurity, political crises, and a two-month suspension of oil production in Esso's plants (representing one-fourth of total production), combined with a slow resumption in global activities still impacted by the pandemic, led to a second consecutive year of recession, with GDP growth contracting by 1.2 percent (-4.2 percent in per capita terms). While Chad's situation is similar to that of other oil exporting countries in the Gulf of Guinea, such as Angola and the Republic of Congo, other countries have already started to recover (Figure 1.2).

Figure 1.1 GDP Growth in Chad, 2018–24



Source: *Chadian authorities and World Bank staff estimates.*

Figure 1.2 GDP Growth in Selected Oil Exporting Countries, 2018–24

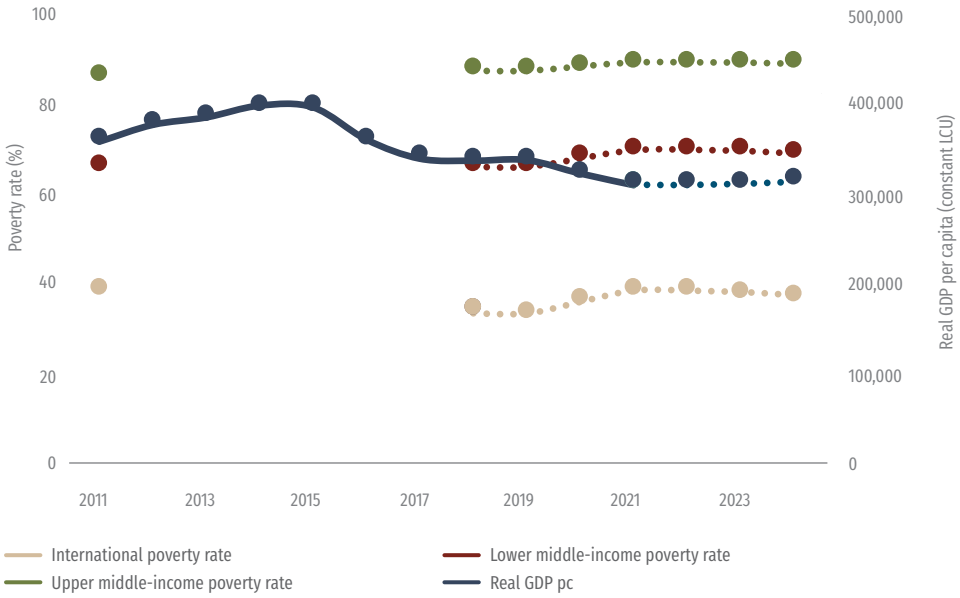


Source: *World Bank Chad Macro Poverty Outlook.*

2 Chad Economic Update, 2021, *Recovering from shocks: improving macro-fiscal sustainability to rebuild better.* https://openknowledge.worldbank.org/handle/10986/36441?show=full

The extreme poverty rate (measured using US$1.9/day per capita, 2011 PPP) is estimated to have increased by more than 2 ppts between 2020 and 2021 to 37.8 percent, with the number of extremely poor increasing from 5.8 to 6.2 million. The COVID-19 crisis has had an impact on the livelihoods of poor and vulnerable households. According to data from high-frequency phone surveys conducted in 2020, two-thirds of households reported a loss in their total income, 57 percent of households receiving transfers saw a decline in this source of income, and a fifth of households seeking health care were unable to access it. Higher food inflation in 2021 also contributed to the increase in poverty, as food represents a large share of the consumption basket of poor and vulnerable households.

Figure 1.3 Actual and Projected Poverty Rates and GDP per Capita



Source: *World Bank.*

Security and political developments triggered by the death of the president in 2021 disrupted the projected recovery. The passing of President Idriss Deby Itno in April 2021, during a battle against the FACT rebellion, led to disruptions of economic activities and rising uncertainties in the second quarter of 2021 as the new authorities restored security and consolidated power.[3] Public funding was transferred from expenditures on essential sectors such as agriculture, education, and health toward military spending to support the ongoing political transition.

3 Chad Economic Update, 2021, *Recovering from shocks: improving macro-fiscal sustainability to rebuild better.* https://openknowledge.worldbank.org/handle/10986/36441?show=full

The suspension of oil production at Esso's plants in Chad further hampered the economic recovery. In mid-October 2021, labor strikes suspended oil production at Esso's plants that represent one-fourth of the country's total oil production. This situation worsened in November with a major fire that burned parts of the plants, reducing daily oil production by 39,000 barrels. Despite the resumption of activities in December 2021, the suspension translated into a reduction of Chad's oil production by 8.2 percent. As a result, the country's total oil production stood at 42.4 million barrels in 2021.

In addition, the country experienced two relatively big waves of COVID-19 cases while the vaccination rate was low. Chad experienced a surge of COVID-19 cases at the beginning of 2021 and another at the end of the year. The first wave started in December 2020 and ended in May 2021, while the second wave started in November 2021. The first wave led to the reinstitution of containment measures, resulting in many mobility restrictions in 2021Q1, and the second wave led to another round of (albeit modest) restrictions. As of end-December 2021, there have been 6,183 confirmed cases and 184 deaths related to COVID-19 in Chad since the beginning of the pandemic. The vaccination rate has been consistently low nationwide, with only 1.4 percent of the population having received at least one dose of a COVID-19 vaccine as of December 31, 2021.

Agriculture remained the main growth driver in 2021, contributing 1.9 percentage points to GDP growth. With borders reopening and the resumption of activities in global value chains, production's intrants availability grew in local markets. Meanwhile, livestock exports resumed, driven by increased demand in neighboring countries. Lower oil revenues in 2021 (based on the 2020 oil sell), which dropped by 32.9 percent, led to a negative contribution of this sector to growth (by -1.4 percentage points [ppts]). Moreover, the security and political crisis, strikes, social tension in the public sector, and inter-communal conflicts at the borders have disrupted the service sector, which also had a negative contribution to growth (-1.6 ppts) in 2021.

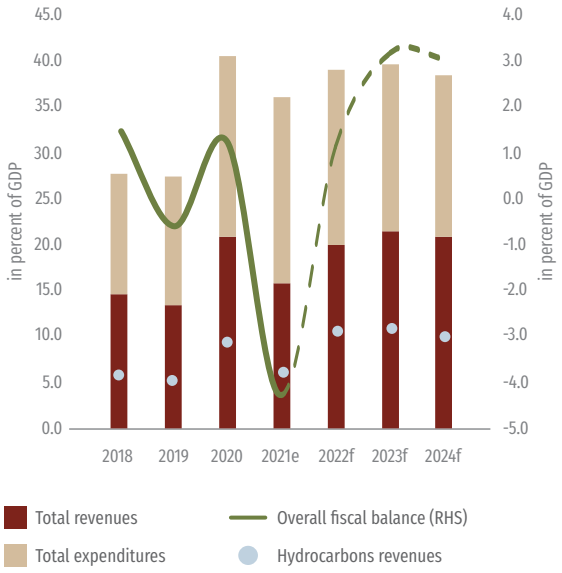
As containment measures that affected domestic supply chains were lifted, inflation dropped from 3.5 percent in 2020 to 1.0 percent in 2021. Food inflation was higher than the consumer price index (CPI) at 3.0 percent in 2021 (with bread and cereal prices increasing by 6.4 percent), but significantly lower than in the rest of the Sahel. Episodes of insecurity (e.g., political uncertainties in 2021Q2 and inter-communal conflict in northern Cameroon toward end-2021) contributed to higher food prices in local markets. Lower cereal production due to poor distribution of rain during the last rainy season was also a driver of higher food prices. A reduced food supply and increased food prices have led to major food insecurity. The government has taken a series of measures since mid-2021 to put a halt to the surge in food prices. For example, in June 2021, the minister of finance and budget put in place an arrêté to exempt certain food and health products from duties and taxes.

Meanwhile, the security and political crisis in 2021Q2 halted public capital investment spending. Many infrastructure projects in areas such as energy, water, information and communication technologies, and road construction (as well as activities by the New Chadian Textile Company [NSTT] and the national cement company

[SONACIM]) initiated by late President Deby in 2020 were paused after his sudden death[4] The government shifted its focus to solving the sociopolitical crisis that followed the death of the president. As a result, public investment spending was mainly on security or military-related equipment, representing about 45.4 percent of total public capital expenditure (or 3.9 percent of GDP) in 2021.

Public finance: Security and political developments driving an increase in current spending

Figure 1.4 Fiscal Position, 2018-24, (% of non-oil GDP)



Source: *Chadian authorities and World Bank staff estimates.*

Figure 1.5 Government Spending, 2018-24 (% of non-oil GDP)

Source: *Chadian authorities and World Bank staff estimates.*

In 2021, Chad posted a fiscal deficit (excluding grants) of 6.7 percent of GDP as it increased public spending on security and other areas related to the political transition. Despite a significant increase in oil prices, realized oil revenues were low due to the one-year lag in taxation on oil revenue. Given limited grants, which stood at 2.4 percent of GDP, the overall fiscal deficit (including grants) remained high, at 4.3 percent of GDP. Moreover, increasing liquidity needs, partly stemming from growing political and security expenses and high levels of debt service relative to domestic revenue, constrained Chad's ability to improve essential services and infrastructure delivery. This means that a successful debt restructuring process under the G20 Common Framework would provide substantial relief to Chad by helping restore a sustainable fiscal balance, which in turn would allow the country to increase social and investment spending over the long term.

4 Chad Economic Update, 2021, *Recovering from shocks: improving macro-fiscal sustainability to rebuild better.* https://openknowledge.worldbank.org/handle/10986/36441?show=full

Lower fiscal revenue was mainly driven by decreased oil revenue and limited grants in 2021. As oil tax collection is based on the previous year's oil revenue performance, oil revenue dropped from 9.1 percent of GDP in 2020 to 5.8 percent of GDP in 2021. Also, delays in debt restructuring have hindered donor support to Chad, leading to a 43.6 percent decline in total grants, from 4.5 to 2.4 percent of GDP between 2020 and 2021. Tax revenue slightly increased from 7.1 percent of GDP in 2020 to 7.4 percent of GDP in 2021. Total fiscal revenue (including grants) declined by 19.8 ppts, from 20.9 percent of GDP in 2020 to 15.9 percent of GDP in 2021.

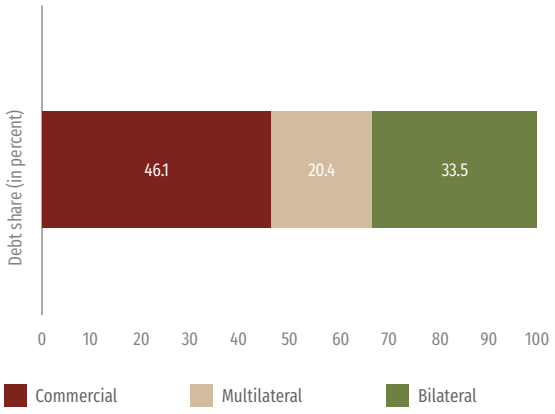
Following a sharp increase in 2020, total expenditure continued to grow in 2021. With the gradual removal of COVID-19-related expenditure, overall public expenditure grew by 8.1 percent (to 20.1 percent of GDP) in 2021, building on the 31.4 percent growth (to 19.7 percent of GDP) in 2020. With the removal of health-related expenditure, goods and services expenditure fell slightly by 0.9 percent (to 1.8 percent of GDP) in 2021, a reversal from the 39.8 percent increase (1.9 percent of GDP) recorded in 2020. Wage and compensation expenditures remained around 7.0 percent of GDP in 2021, similar to the level in 2020. Current transfers dropped by 16.9 percent (to 2.9 percent of GDP), and capital expenditure grew by 18.9 percent (to 6.9 percent of GDP), mainly driven by security-related capital expenditure. Due to oil revenues being below the threshold, Chad did not save in the stabilization fund in 2021.[5]

Chad faced liquidity constraints in both the first and second quarter of 2021. Security and political developments (including the political transition) stressed public spending. The government was already facing accrued arrears, impacting key sectors such as education and health, and it signed a social pact to ease worker disputes on October 4, 2021. The government agreed to pay XAF 1 billion to beneficiaries of 2,975 inactive civil servants/public agents (retirees or deceased) to cover transport cost arrears for 2016, 2017, and part of 2018. Starting on November 25, 2021, over 800 of these beneficiaries started collecting funds to cover their transport costs. In the absence of significant donor budget support in 2021, Chad used the additional International Monetary Fund (IMF) Special Drawing Rights (SDR) allocation and an exceptional T-bonds debt rollover agreement with the Bank of Central African States (Banque des États de l'Afrique Centrale, BEAC) to cover its liquidity needs.

The government resorted to the Economic and Monetary Community of Central Africa (*Communauté Économique et Monétaire de l'Afrique Centrale*, CEMAC) market to cover liquidity needs in 2021. The Chadian authorities used the XAF 10 billion (0.15 percent of GDP) accumulated in the stabilization fund so far and issued T-bills on the CEMAC market throughout 2021, totaling 5.1 percent of GDP. Following the security and political crisis, T-Bills worth 2.0 percent of GDP were issued in 2021Q2. In addition, most of the T-bills published in 2021 had a maturity of 52 weeks, with a 6.5 percent interest rate. The government plans to continue to seek financing on the CEMAC market in 2022, albeit at a lesser extent.

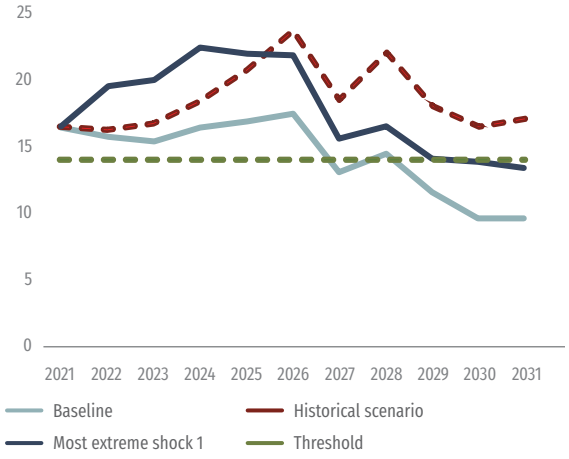
5 In 2020-21, Chad did not explicitly follow any specific national or regional fiscal rule other than the stabilization fund accumulation mechanism.

Figure 1.6 Composition of External Debt, 2020



Source: *Public debt statistics bulletin Q4, December 2020.*

Figure 1.7 Debt Service as a Share of Total Revenue



Source: *Chadian authorities, selected creditors, and World Bank and IMF staff estimates.*

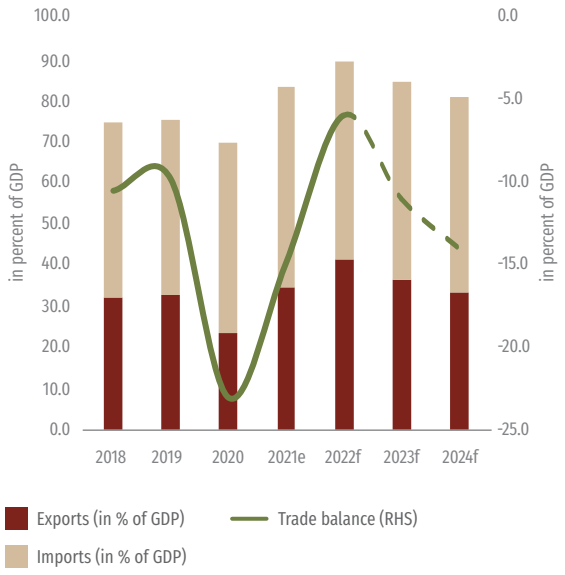
Chad's debt service remains a major threat to its fiscal sustainability. Its public debt, which increased from 49.9 percent of GDP in 2020 to 52.1 percent of GDP in 2021, comprises domestic (23.9 percent of GDP) and external (28.2 percent) debt. Commercial debt makes up the bulk of Chad's public and publicly guaranteed (PPG) external debt. In 2020-21, external debt was dominated by commercial debt (46.1 percent), mainly owed to Glencore, followed by official bilateral (33.5 percent, most of which was owed to non-Paris club official creditors, primarily China and Libya) and multilateral (20.4 percent) debt (Figure 1.6). Under the baseline scenario, the external debt service-to-revenue ratio threshold has been breached, rising above 14 percent in 2021 due to lower revenue and associated higher borrowing in response to the pandemic. As a result, Chad's government has requested debt restructuring under the G20 Common Framework, which means that the country is classified as being in debt distress.

External position: The current account deficit narrowed

The current account deficit narrowed from 7.8 percent of GDP in 2020 to 6.0 percent in 2021, driven by oil exports. The value of exports increased by 53.6 percent in 2021, supported by the sharp recovery in oil prices (66.4 percent), although exports decreased by 0.4 percent in volume terms. The value of imports also grew by 11.5 percent in the same year, supported by the recovery in global supply chains and the reopening of borders.

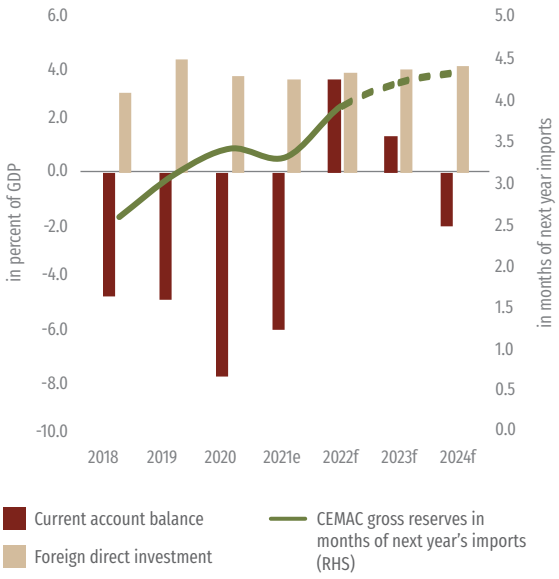
The reopening of the Chad-Cameroon land border in June boosted goods trade. Chad is a landlocked country that uses the Douala port as its main transit point for international trade. As the COVID-19 situation improved, the Nguéli bridge connecting N'Djamena to the Cameroonian city of Kousseri was officially reopened on June 20, 2021. The border had been closed since March 2020, and the reopening helped boost international trade, with important goods transiting through Cameroon to reach the N'Djamena market.

Figure 1.8 Trade Balance, 2018–2024



Source: *Chadian authorities and World Bank staff estimates.*

Figure 1.9 Reserves and Current and Financial Accounts in Chad and CEMAC



Source: *Chadian authorities and World Bank staff estimates.*

CEMAC's regional external reserves remained below 5 months of imports in 2021. Despite higher oil prices and the IMF 2021 SDR allocation (equivalent to US$1.4 billion), there has only been a slight increase in regional reserves, from 3.1 months of imports in 2020 to 3.4 months in 2021, still below pre-COVID projections. As oil prices peak, CEMAC's regional reserves are projected to continue accumulating, albeit slowly, reaching 3.9 months of imports in 2022. Reserves are expected to remain below 5 months of imports until 2024.

The current account posted a surplus in 2021, driven by improved performance in the oil sector. The external surplus is expected to average 1.0 percent of GDP in 2022–24. The global growth recovery will boost foreign direct investment (FDI), and the finalization of the debt restructuring process will stimulate budget support from donors. Both FDI and donor support will boost Chad's external position.

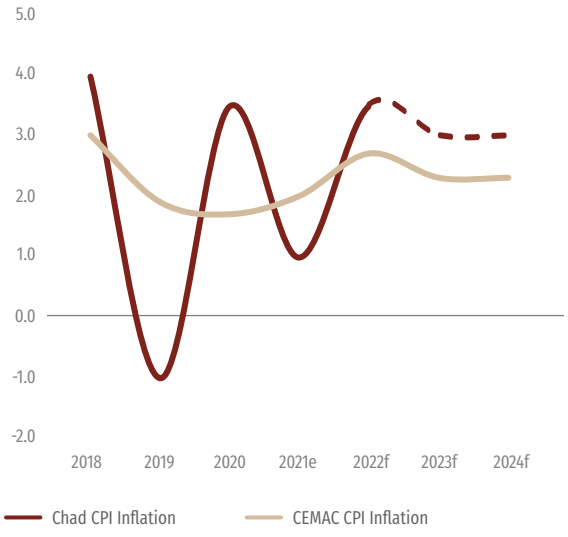
Monetary policy: Tightened monetary policy for better stability in CEMAC

The BEAC tightened its monetary policy in late 2021. Chad's monetary and exchange rate policies are managed by the BEAC. Regional monetary policy was tightened in 2016–19 to support regional reserve accumulation, before it was relaxed in March 2020 to mitigate the impact of COVID-19, with the policy interest rate lowered from 3.5 to 3.25 percent. On November 25, 2021, the BEAC decided to raise the policy interest rate again to 3.5 percent in response to: (i) risks to monetary stability in the CEMAC zone due to concerns about the evolution of foreign exchange reserves; and (ii) the economic outlook. The marginal lending facility rate was also increased from 5.0 to 5.25 percent.

Chad's price competitiveness improved as its real effective exchange rate (REER) depreciated by 4.1 percent in 2021. Overall CEMAC competitiveness improved as the regional REER depreciated by 2.4 percent in 2021Q4, following a depreciation of 0.8 percent in 2021-Q3. This improved competitiveness is explained by the depreciation of the nominal effective exchange rate and lower inflation in the sub-region than in its main trading partners. In addition, there was improved competitiveness in exports (-2.5 percent) and imports (-2.3 percent). In the first two quarters of 2021, Chad's competitiveness deteriorated as its REER appreciated by 1.7 and 5.1 percent in the first and second quarters of 2021, respectively, as political and security tensions hampered international trade.

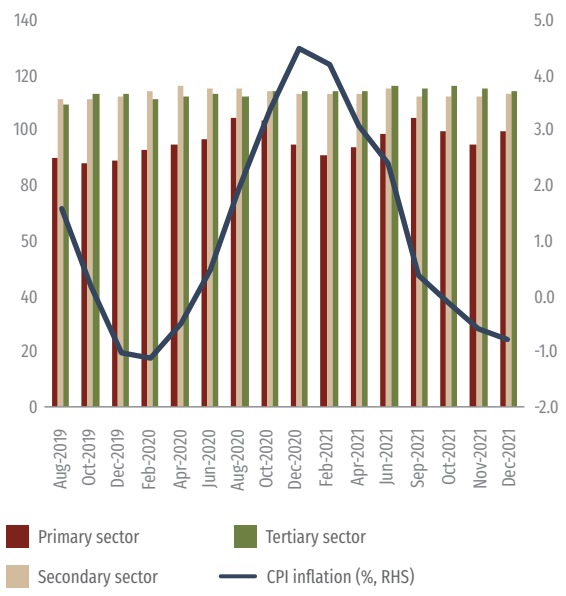
Inflation fell from 3.5 percent in 2020 to 1.0 percent in 2021—below the CEMAC convergence criteria. The CPI in Chad continued to decline since January 2021 and was lower than the average of CEMAC for the year (Figure 1.10). However, there were substantial differences between sectors and groups, as some experienced significantly high inflation, while others saw a price deflation. The main sectors/groups hit by inflation include: food and non-alcoholic beverages (3.0 percent); restaurants and hotels (4.4 percent); furniture and household items (1.7 percent); clothing and footwear (1.4 percent); and restaurants and hotel services (1.3 percent). Within the food products and non-alcoholic beverages group, essential items such as meat (7.2 percent), vegetables (6.4 percent), and bread and cereals (6.4 percent) experienced the highest price jump. This increase in the price of essential items has exacerbated Chad's growing food crisis.

Figure 1.10 Inflation in Chad and CEMAC, 2017–23



Source: *Chadian authorities and World Bank staff estimates.*

Figure 1.11 Monthly CPI Variation by Production Sector



Source: *Chadian authorities and World Bank staff estimates.*

The BEAC has supported monetary policy with new measures to help mitigate the COVID-19 crisis. The BEAC Monetary Policy Committee held an extraordinary meeting on July 22, 2020, to take complementary actions to review the government and central bank monetary strategy. It adopted a one-off buyback program and targeted public securities of XAF 600 billion (at the rate of XAF100 billion per member country) over 6 months. The securities buyback program was launched on September 1, 2020, and renewed for 6 months in March 2021. However, the program did not attract many market professionals, who assessed it to be overly complex. Nevertheless, it allowed countries deemed risky to obtain the funds they were sourcing in the market. The BEAC contributed only 23.3 percent of the funds raised by countries in the local market between November 2020 and May 2021. Chad was the second-largest beneficiary[6] of the securities buyback program: XAF 62.9 billion out of the XAF 215.6 billion captured by CEMAC countries.

COVID-19-related shocks increased the likelihood of bank failures. The significant reduction of commercial activities and negative GDP growth led bank deposits to decline, negatively impacting the banking sector. As a result, broad money growth fell from 11.3 percent in 2020 to 1.7 percent in 2021. Growth of credit to the economy increased from 5.5 percent in 2020 to 14.6 percent in 2021. The government is also pursuing efforts to repay its domestic arrears to relieve the private and banking sectors.

1.2 Economic Outlook and Risks

A gradual economic recovery

Economic growth is projected to gradually accelerate as oil prices peak in global markets and international trade and economic activity recover in agriculture and industry. Oil prices already reached significantly high levels in 2022Q1, with Brent's price exceeding US$100/barrel. Strong oil sector performance is expected to boost international trade and spur activities in other sectors. The recovery is expected to translate into 2.8 percent GDP growth (-0.2 percent in per capita terms) in 2022, with a sharp increase in oil exports and the slow resumption of activities in the services sector. Projections show oil and non-oil GDP to grow by 2.4 percent and 3.0 percent, respectively, in 2022.[7] Economic growth in other regional oil-exporting countries will also benefit from the surge in oil prices. Boosted by rising food and oil prices, inflation is projected to increase to 3.5 percent in 2022, before settling at an average of 3.0 percent (CEMAC's convergence criteria) in 2023-24.

6 As evidenced by the significant increase in the holdings of Treasury Bills in 2021.

7 In 2022, projected oil GDP growth (2.4 percent) is mainly explained by the recovery in oil production; meanwhile higher than previously expected oil price contributed to about 0.4 percent to the 3.0 percent of the non-oil GDP growth.

Given the slow pace of the economic recovery, the adverse effects of the pandemic on poor and vulnerable households are expected to remain in the foreseeable future. The extreme poverty rate is expected to increase to 38.0 percent in 2022 due to projected negative GDP per capita growth, and the number of poor people will likely increase to 6.4 million. Continued high food inflation, low coverage of social protection programs, and lack of structural economic transformation will limit the space for poverty reduction. For a material reduction in the absolute number of poor people, annual real GDP growth would need to be significantly above Chad's high population growth rate (3.3 percent).

The continuous relatively high performance of the oil sector will further boost the recovery in 2023-24, with economic growth averaging 3.7 percent. This projected overall GDP growth will not lead to any significant GDP per capita growth. Non-oil GDP is projected to gradually increase from 2.9 percent in 2022 to 4.2 percent in 2024, thanks to the gradual elimination of the effects of the COVID-19 pandemic, the end of the political transition, and the adoption of structural reforms. The outlook assumes a gradual control of spending, with the removal of expenditures related to the political transition and security. It also assumes increased domestic revenue mobilization, with more public investment in critical non-oil sectors. Improving the quality and targeting (particularly spatially) of social spending would help create fiscal space for increased public investment, which also underpins the outlook.

The fiscal balance (including grants) is expected to stand at 1.2 percent of GDP in 2022, before increasing further in 2023-24. The 2022 budget assumes a solid economic recovery, due to strong oil production and prices and a post-pandemic recovery of non-oil activity. Total public revenues (grants included) are forecasted at XAF 1,330 billion, representing an increase of 28.5 percent compared to 2021. More controlled security spending and the removal of political transition-related expenditure would result in a modest 3.7 percent decrease in spending. Total public expenditure (excluding debt amortization) is projected at 22.3 percent of GDP, with a substantial drop in investment compared to 2021, comprising 15.8 percent of GDP in current expenditure and 6.5 percent of GDP in capital investment. In 2022, the authorities project an overall budget surplus of 0.1 percent of GDP and a non-oil primary deficit of 8.9 percent of GDP. While revenue would continue to increase steadily, the spending increase will be modest in 2023-24 to meet the fiscal consolidation target set by the IMF's new Extended Credit Facility (ECF) reform program.

Debt restructuring is needed to bring Chad's risk of debt distress from 'in distress' to 'moderate.' Under the baseline scenario, the external debt service-to-revenue ratio threshold is breached, rising above 14 percent in 2021 due to lower revenue and higher borrowing in response to the pandemic. The ratio would not permanently drop below 14 percent until after 2029 as the Glencore debt matures. The benchmark for public debt is also breached in 2021–26 under the baseline scenario. In the upcoming years, public debt is projected to increase slightly, averaging 53.9 percent in 2022–24, driven by the ECF.

Box 1.1 Debt Restructuring under the G20 Common Framework

Chad is under debt distress and must restructure its debt as a matter of urgency. The government has requested debt restructuring from its creditors under the new G20 Common Framework. On June 16, 2021, the main official bilateral creditors, and on November 10, 2021, the main commercial creditors (Glencore) agreed on a debt restructuring. Technical discussions are underway between the authorities and creditors on debt restructuring parameters that will serve as the basis of a memorandum of understanding (MOU).

An MOU on debt parameters is expected in the first half of 2022. The increasing oil price is complicating the completion of the MOU as initially planned. Hence, the ongoing discussions to find an agreement on debt treatment with official and private creditors are likely to be more protracted than initially envisaged.

With Chad benefiting from exceptional access, debt treatment will need to be sufficient to ensure that debt is sustainable with high probability. This means that that its external and overall risks of debt distress—assessed as 'in debt distress' at the time of the ECF request—are brought to 'moderate"' by the end of the program period. Given the substantial downside risks, including the significant probability that oil prices could revert to the levels observed over the last few years, debt treatment needs to be based on conservative oil price assumptions. Specific contingencies are expected to be included to provide protection to Chad in case oil prices decline even below these conservative assumptions. At the same time, creditors could benefit from some upside risks if prices remain elevated for an extended period. A comparable debt treatment will also need to be agreed upon with private creditors.

Source: *World Bank.*

The outlook is subject to significant downside risks

The economic recovery will be fragile and subject to significant downside risks. These risks include: (i) increased insecurity and instability during the political transition period; (ii) public financial stress from the management of the political transition; (iii) uncontrolled COVID-19 waves due to low vaccination rates; (iv) a prolonged debt restructuring process; (v) further climate-related shocks affecting agricultural output and exacerbating food insecurity; and (vi) the war in Ukraine and related sanctions and responses. It is likely that at least one/some of these risks will materialize and concurrent risks are a possibility.

Increasing security threats associated with the political transition are a high source of risk to sociopolitical stability and a stable business environment. Regional insecurity and instability, particularly insurgencies in Lake Chad and Sahel countries, exacerbate Chad's dire social and economic situation. Boko Haram insurgents have continued to attack the country's military in the Lake Chad province, and regional insecurity has worsened across the Sahel, notably in Burkina Faso and Mali. Chad hosts hundreds of thousands of refugees from Sudan, Cameroon, and the Central African Republic, following intercommunity conflicts. The political transition has been

risky and costly. The country has engaged in a challenging and potentially costly inclusive national dialogue, with elections scheduled for the end of 2022. This milestone may not be met as the national pre-dialogue, initially scheduled for January 25, 2022, has already been postponed twice. A successful transition could put the country on a better development path, but a failed political dialogue could derail the projected economic recovery.

Managing the political transition and security risks could stress public finances and lead to a lack of service delivery in critical social sectors such as health and education. Ensuring security is costly, and elevated security threats keep attracting more resources at the expense of socioeconomic development spending. In fact, the implementation of the political dialogue, which is critical to the success of the transition and subsequent elections, will be expensive. For example, during the past couple of years, schooling has been hampered by political and security disruptions, teacher strikes following unfulfilled promises of paying salaries and benefits arrears accumulated since 2014, student strikes over poor schooling conditions, and obsolete infrastructure.

Chad's low vaccination rate presents a risk of prolonging the pandemic. Only 1.6 percent of the population has received at least one dose of a COVID-19 vaccine, as of end-February 2022. The country needs to continue its vaccination campaign to protect its frontline health workers, teachers, and people aged 50 years and over. However, it has not yet purchased additional vaccine doses. A resurgence of COVID-19 that would lead to the closure of economic activities would reduce the projected growth rate.

A prolonged debt restructuring process could derail the newly adopted ECF program, donor support, and economic reforms. While Chad's private and bilateral creditors have already agreed on participating in debt restructuring, there have been substantial delays in finalizing the process. An extension of debt restructuring talks passed the first half of 2022 would lead to a delay in completing the first ECF review, which could put the program in jeopardy.[8] The ECF review is important to attract donor funding aimed at supporting the political transition and the adoption of economic policy reforms related to economic governance, the social sector, and energy access.

Chad is among the most vulnerable countries in the world to the risks of climate change.[9] Ongoing climate change contributes to: (i) desertification; (ii) the degradation of forests, soil, and natural habitats; (iii) the loss of biodiversity; (iv) the depletion of water tables; and (v) the silting of oases. Climate change is also contributing to more frequent episodes of drought and flooding. Unfavorable weather conditions have hampered agriculture production, leading to food insecurity in 2021, and the country could face the same challenges in 2022. Chad's agriculture depends heavily on the weather. Like any Sahel country, the weather's main characteristics include a short rainy season and water scarcity. Chad experienced a poor distribution of rain during the 2021 rainy season, and a similar situation in 2022–24 would reduce agricultural production and its contribution to growth.[10]

8 IMF 2021.

9 ding to the Notre Dame Global Adaptation Initiative (ND-GAIN) Country Index 2021.

10 Based on the results of the December 2021 Cadre Harmonisé (CH) on the situation in October-December 2021, an estimated 970,000 million Chadians are acutely food insecure in Phase 3 (crisis) and Phase 4 (emergency), and 1.7 million are projected to be in this situation during the June-August lean season in 2022.

The Russia-Ukraine war represents both downside and upside risks for Chad. The economic impact of the crisis on Chad would primarily be through higher global food (grain) and energy prices, as direct trade, investment, remittance, and migration links with Russia and Ukraine are limited. The projections for 2022–24 already reflect the recent sharp increase in oil and gas, agriculture, and metal and mineral prices since January 2022, but there is a very high degree of uncertainty related to the war and its economic impact. Higher food prices would exacerbate Chad's food insecurity challenges, making it harder for the country to close its cereal deficit, which is forecasted at 291,000 tons in 2021-22.[11] However, Chad will also benefit from rising oil prices, as oil revenues would increase with higher oil prices. However, higher oil prices would also reduce the fiscal benefit of any debt restructuring under the G20 Common Framework if oil price assumptions increase to reflect current oil prices, potentially reducing the net fiscal benefit of rising oil prices.

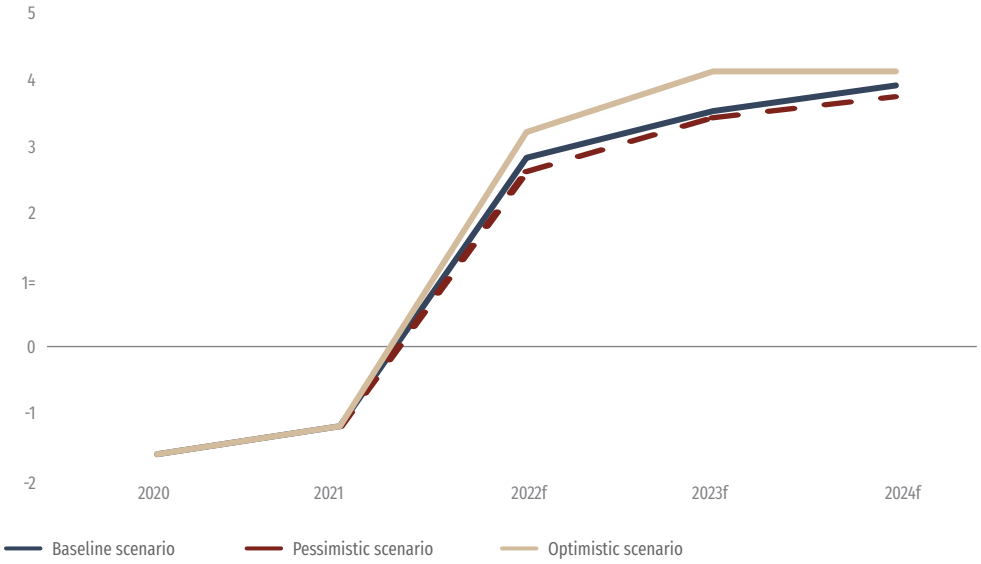
Table 1.1 Key Macroeconomic Indicators by Scenario

	2020	2021e	2022f	2023f	2024f
Baseline scenario					
Oil price ($/bb)	42.3	70.4	96.7	84.0	77.4
Real GDP growth (%)	-1.6	-1.2	2.8	3.5	3.9
Inflation (CPI, %)	3.5	1.0	3.5	3.0	3.0
Current Account Bal. (% GDP)	-7.8	-6.0	3.6	1.4	-2.1
Fiscal Balance (% of GDP)	1.2	-4.3	1.2	3.2	3.1
Pessimistic (lower growth) scenario					
Oil price ($/bb)	42.3	70.4	65.9	63.0	61.0
Real GDP growth (%)	-1.6	-1.2	2.6	3.4	3.7
Inflation (CPI, %)	3.5	1	2.9	2.8	2.8
Current Account Bal. (% GDP)	-7.8	-5.6	-5.2	-6.1	-6.9
Fiscal Balance (% of GDP)	1.2	-4.3	-0.5	1	-0.9
Optimistic (higher growth) scenario					
Oil price ($/bb)	42.3	70.4	96.7	84.0	77.4
Real GDP growth (%)	-1.6	-1.2	3.2	4.1	4.1
Inflation (CPI, %)	3.5	1.0	3.5	3.0	3.0
Current Account Bal. (%GDP)	-7.8	-6.0	3.6	1.3	-2.1
Fiscal Balance (% of GDP)	1.2	-4.3	0.3	1.0	0.7

Source: *World Bank staff computations.*

11 Before the Russia-Ukraine war, food products were already becoming scarce in local markets, due in part to the poor distribution of rain during the last rainy season.

Figure 1.12 Growth Scenarios



Source: *World Bank staff computations.*

Medium-term growth prospects will depend on oil prices.[12] Although the price of oil has been relatively high for the past months, medium- and long-term oil revenues remain very uncertain. The macroeconomic framework presented in the baseline scenario assumes a high oil price of US$96.7 per barrel (bbl) in 2022 that will remain at about US$84/bbl in 2023-24 (Table 1.1). It also assumes that the government spending path will follow the newly adopted IMF ECF program. This Economic Update considers two other scenarios: a pessimistic and an optimistic scenario. The pessimistic scenario assumes a modest oil price increase and, like the October World Economic Outlook, assumes the ECF fiscal consolidation plan. By contrast, the optimistic scenario considers the high oil price (the baseline scenario) but assumes that the government will not post a large fiscal surplus. Specifically, two-thirds of the expected surplus will be used to finance public spending, with about 40 percent going to capital expenditure. If the expected oil windfall is used to strengthen social and investment spending, growth could reach 3.2 percent in 2022 and 4.1 percent in 2023-24. In the pessimistic scenario, where oil prices are lower than projected, GDP would stand at 2.6 percent in 2022 and 3.5 percent in 2023-24 (Figure 1.12).

12 Oil production depends on the technical capacity of oil companies, and this has remained relatively stable over the last 2-3 years.

Impact of Inflation on Poverty

Inflation had an impact on households in 2020-21 and is expected to continue to affect them in 2022. ECOSIT 4 survey data suggest that 20 percent of Chadian households (25 percent in urban areas and 19 percent in rural areas) experienced high food prices during the last 3 years before the survey was conducted in 2018/19. While prices fell in Chad in 2018-19, they increased during the following years, with the CPI increasing by 3.5 percent and 1.0 percent in 2020 and 2021, respectively, and it is projected to increase by 3.5 percent in 2022.

A simulation analysis is used to evaluate the impact of inflation on headcount poverty. Using a demand system estimation to account for behavioral responses of households to a given change in food prices, three different scenarios are simulated to assess the impact of inflation on poverty in Chad (Figure 1.13). In the first scenario (no inflation), households experienced the same price as in 2018 during the next 4 years (2019, 2020, 2021, and 2022). In the second scenario (business as usual), inflation in 2019–22 is considered the same as in 2018. In the third scenario (inflation realized), it assumed that households faced the level of inflation that has been realized during each year plus the projection in 2022. In each scenario, household income increases at the same rate as GDP per capita growth. Given that poverty data are from 2018, the simulation baseline line is 2018.[13]

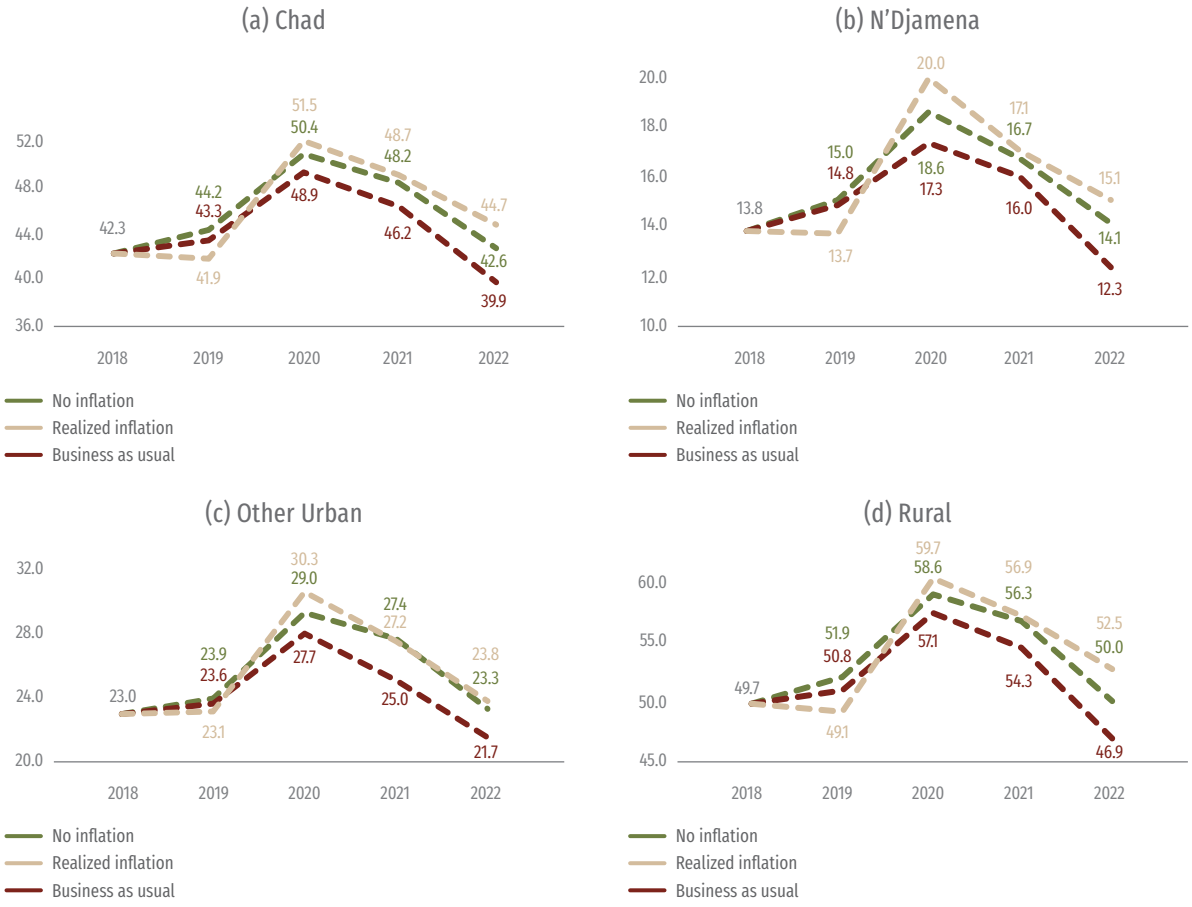
The scenarios confirm that inflation has hindered progress in poverty reduction, as the inflation periods are associated with higher poverty rates. While the country experienced an increase in prices in 2020, 2021, and 2022, following deflation in 2019, the poverty rate is higher for the realized inflation scenario compared to the business as usual (inflation equal to 2018 inflation) and no inflation (inflation equal to 0) scenarios. In 2022, the poverty rate under the realized inflation scenario (44.7 percent) is 4.8 ppts higher than it is under the business-as-usual scenario (39.9 percent). Since inflation is negative in 2022 under the business-as-usual scenario, households experienced an improvement in their purchasing power due a decrease in prices and an increase in their income thanks to economic growth. The realized value of inflation in 2022 is 3.5 percent, which means that households experienced a worsening of their purchasing power due to high prices while their income increased.

For all the scenarios, the effect of inflation on poverty seems to have been more moderate in urban than in rural areas (Figure 1.13). Between 2020 and 2022, the gap between the projected poverty rates under the business as usual and the realized inflation scenarios varied from 2.6 ppts to 5.6 ppts in rural areas, while the gap varied between 1.1 ppts and 2.8 ppts in the capital city. In other urban areas, the narrowest gap was 2.1 ppts, almost the same as the widest gap of 2.6 ppts.[14]

13 See Annex 2: Poverty Methodological Note for methodological details of the analysis.

14 See Annex 3 for a detailed analysis on food price elasticities of household consumption and welfare.

Figure 1.13 Impact of inflation on poverty rates



Source: *World Bank staff calculations using data from ECOSIT 4 and consumption price index*

Note: *In the first scenario (no inflation), it is assumed that households face the same price levels as 2018 (the year of the survey) in the next 4 years (2019, 2020, 2021, and 2022). In the second scenario (business as usual), inflation in 2019, 2020, 2021, and 2022 are considered the same as in 2018. In the third scenario (inflation realized), it assumed that households face the level of inflation that has been realized during each year plus the projection in 2022. For each of these*

There is a need to support households through the social protection system to cope with price increases, particularly in the context of Chad's pervasive food poverty. This would allow households to avoid falling into poverty and reduce their risk of food insecurity. Indeed, according to the World Bank's Chad Poverty Assessment, 15 percent of people are estimated as 'food poor,' meaning they are unable to meet a basic nutritional requirement of 2,300 kilocalories per day. In addition, the country's current public social assistance programs are limited, often failing to reach the poorest and most vulnerable population. In the context of price increases, Chadian children are at risk of food insecurity that would negatively impact their human capital accumulation.

Box 1.2 Revisions to the World Bank Macro-Poverty Outlook key macro-fiscal indicators, including the impact of the Russia-Ukraine War

Chad's 2021 real GDP growth was revised downward due to economic disruptions in the second quarter of 2021 following the consolidation of power among the new authorities and the suspension of oil production at Esso's plants. The 2022 growth estimate was revised slightly upward due to the positive outlook for the oil sector and the projected strengthening of services and agriculture. Inflation was revised downward for 2021 as containment measures affecting domestic supply chains were lifted and borders re-opened. The economic consequences of the Russia-Ukraine War would be primarily through higher global food (grain/fertilizer) and energy prices, which led to an upward revision (+0.5 ppts) of the 2022 inflation estimate. Increases in security and transition spending and the one-year lag in the main component of oil-revenue taxation informed a significant downward revision (-3.1 ppts) of the 2021 fiscal balance. With the value of oil exports expected to be higher due to higher global oil prices, the current account balance was revised sharply upwards (+8.9 ppts), resulting in a current account surplus. The 2022 fiscal balance is expected to be a small surplus due to higher oil prices in 2021 and the one-year lag in revenues.

Table 1.2 Revisions to the Macro-Fiscal Estimates between the World Bank's Macro-Poverty Outlook Fall 2021 (October 2021)[15] and Spring 2022 (upcoming)

Key Macro-Fiscal Indicator	(a) Macro-Poverty Outlook Fall 2021		(b) Macro-Poverty Outlook Spring 2022		(c) Difference *(b) – (a)*	
	2021f	2022f	2021e	2022f	2021	2022
Annual Real GDP growth (%)	0.9	1.8	-1.2	2.8	-2.1	1
Annual Inflation (CPI) (%)	3.0	3.0	1.0	3.5	-2	0.5
Fiscal Balance (% of GDP)	-1.2	0.2	-4.3	1.2	-3.1	1
Current Account Balance (% of GDP)	-4.6	-5.3	-6.0	3.6	-1.4	8.9

Source: *World Bank staff estimates.*

15 Fall 2021 Macro-Poverty Outlook https://www.worldbank.org/en/publication/macro-poverty-outlook/mpo_ssa

Source: *World Bank staff computations.*

1.3 Tackling poverty, Seizing Opportunities to Renew the Social Contract, and Accelerating Growth

To mitigate the impact of a 2-year economic recession on poverty, the government could invest in social sectors. The implementation of the 2022 budget, along with the design of the 2023 budget, should prioritize social spending, including health care-related expenditure such as an increase of physicians, nurses, other medical personnel, medical material, and drugs. The same priority should be given to education to ensure kids stay in school and there is no gender discrimination (Kabir, Dudu, and Tchana Tchana 2021). The authorities should also work toward the progressive integration of Community Teachers (Maitre Communautaire) into the payroll. Finally, the government needs to provide funding to support poor and vulnerable households as well as internally displaced persons and refugees.

It is important to ensure food security in the current geopolitical environment. Food security was a major challenge in 2021 and could be even more challenging in 2022, contingent on weather conditions and the Russia-Ukraine war. The government should consider maintaining the food bank created in 2021 and providing it with relevant types of cereals. The authorities also need to adopt policies to render agriculture more resilient to climate shocks.

To improve the efficiency of public spending, the government should continue public financial management reforms. For example, to improve the efficiency of its services, customs is migrating its management system to ASYCUDA World, which will simplify procedures, optimize controls, and secure custom revenues. In 2021, the government's salary payroll was transferred to the new Integrated Public Finance Management System (SIGFIP), which will help secure revenues, expenditures, traceability, the audit trail, and transparency in executing expenses and payments. Civil servants have been identified and enrolled biometrically throughout the country. SIGFIP is being implemented in partnership with the Government of Rwanda, which has reiterated its support in other areas, including taxes and land registry.

The government and Chadian society should seize the opportunity during the ongoing national dialogue process to agree on a new social contract. Chad has suffered from recurrent episodes of insecurity, conflict, war, and political instability. The current political transition, with the embedded national dialogue process, could be an opportunity for the political elites to agree on what common rules govern political competition. Most importantly, the country needs to agree on what public services should be prioritized and how to speed up the development agenda and quell conflict between various groups. The government, along with all stakeholders in Chad, should seize this opportunity to push for a political, administrative, and economic system that will significantly improve public service delivery.

Chad needs to save its oil windfall in the stabilization fund for use during economic downturns. International oil prices have been rising since June 2021, and the recent Russia-Ukraine war and related development are likely to maintain high oil prices in 2022. The volatility of oil prices in the past and its impact on the well-being of the population call for the prudent use of the projected windfall. To accumulate reserves, the country should use the current stabilization fund at the BEAC to save any additional windfall. Under the current stabilization fund law, Chad's government could save up to XAF 20 billion in 2022 under current oil prices. The government should consider increasing the fund size if the windfall remains high in 2023. This would also allow the government to appropriately plan its investment projects and ensure it has the adequate absorptive and technical implementation capacity.

To boost economic growth, the government needs to accelerate the completion of its debt restructuring efforts. Chad requested debt restructuring under the G20 Common Framework in December 2020. Fifteen months later, official bilateral and commercial creditors have not yet agreed on the debt restructuring parameters. These delays make it more difficult to reach an agreement in the already volatile geopolitical and economic environment. The government and its international development partners should conclude the debt restructuring process so they can focus on economic reforms.

2 SPECIAL TOPIC: STRENGTHENING AGRICULTURAL AND LIVESTOCK VALUE CHAINS FOR ECONOMIC DIVERSIFICATION

The government should adopt policies and develop strategies aimed at accelerating the country's economic diversification and structural transformation. Chapter 1 identified agriculture as the main growth driver in 2021, contributing 1.5 ppts to growth, while other sectors had a negative contribution. While economic growth is projected to rise as oil prices gradually peak in global markets, a sustainable recovery needs to be based on the non-oil sector, including agriculture, as the oil sector is highly volatile. Considering Chad's strong potential in agriculture and livestock, improving productivity by enhancing value chains could help build resilience to shocks, create employment, and reduce the country's oil dependency. In addition, Chad is facing a worsening food security situation, especially in the context of the impact of the Russia-Ukraine war. A more robust agriculture and livestock sector should support food security, which is badly needed. Chad would also benefit from deeper integration into the large regional market and accelerate trade with its neighbors.[16]

2.1 Leveraging the agriculture sector to diversify the economy

Overview of Chad's Agriculture Sector

The agriculture sector is important to the Chadian economy, and most rural households rely on it for their livelihoods and food security. Agriculture supports the livelihoods of approximately 88 percent of households in Chad (WITS 2021), but its share of GDP has been declining over the last decade, from 52.0 percent in 2010 to 28.5 percent in 2019. Agriculture sector growth has stagnated at 3 to 4 percent per year since 2017, having previously recorded periods of either expansion or contraction during the last 19 years (WB 2021). The sector employs about three-quarters of the country's labor force, a share that has remained relatively constant over the last decade (WB 2021). Estimates for 2018 show limited gender segregation of labor force participation in the sector, with women and men representing 45 percent and 55 percent, respectively, of the agricultural labor force (ILO 2021).

16 This chapter is based on two recently completed World Bank reports: Chad Agriculture Sector Review (World Bank 2022a) and Chad Livestock Market Analysis (World Bank 2022b).

Table 2.1 Chad's Agriculture Sector (Percentage)

	2019
Agricultural sector share of GDP (2019)	28.5
Annual ag. sector growth (averaged 2017-19)	3.5
Share of ag. exports value (2019)	4
Total labour force participation in ag. sector (averaged 2010-2018)	76
Female labour force participation in ag. sector (2018)	45
Male labour force participation in ag. sector (2018)	55
Estimated share of arable land under cultivation (2018)	11

Source: *WFP 2017; PRINDEX 2020; WB 2020a, 2021; ILO 2021; ITC 2021).*

In terms of cultivated area, the country's agricultural production system is dominated by the cultivation of food crops for household consumption rather than cash crops. The subsistence agricultural system in Chad is characterized by low use of fertilizers, with less than 5 percent of households reporting using them, and low mechanization, as tractor ownership is at a mere 0.5 percent (WB 2020a). The average farm size for rainfed plots is under 1 hectare (ha) (WB 2020a). In 2017, 4.5 million ha were cultivated, of which only 43,000 ha were irrigated (6,000 ha under full irrigation and 37,000 ha under partial irrigation). Only an estimated 11 percent of arable land is currently under cultivation (WFP 2017).

The transformation from subsistence farming to modern and complex value chains is missing. Agricultural value chains in Chad remain underdeveloped for cash crops and very limited in the case of food crops. They are fragmented and inefficient, with a lack of certifications, standards, and grading systems, which prevents the country from harnessing the full potential of crop production. This is compounded by poor or lack of hard infrastructure, limited private sector development, and inadequate energy supply. There is no official national strategy to support value chain development, but cash and food crops are flagged as potential opportunities in sectoral policy documents related to agriculture, such as the National Strategy for Poverty Reduction (PRS I, 2003–2006 and PRS II, 2008–2011), National Investment Plan for the Rural Sector (PNISR) (2014–2020, 2016–2022), Agriculture Development Plan 2013–2018, and the Rural Development Intervention Plan (PIDR).

Table 2.2 Key Trade Values, Chad's Exported Crops

	Cotton	Gum Arabic	Sesame
Revealed Comparative Advantage, 2019	1.49	924	148
Total world export value in 2019 (US$ million)	39.19	319	3.40
Total quantities exported from Chad in 2019 (thousand tons)	0.86	16.23	26.18
Total value exported from Chad in 2019 (US$ million)	1.41	21.27	36.80
Share of global export value in 2019 (%)	0.004	6.67	1.07

Source: *World Bank staff computations.*

Chad has untapped potential in agricultural commodities goods

Chad has a comparative advantage in sesame and gum arabic, with important growth and poverty reduction potential.[17] While cotton has historically been an important cash crop for the country, it collapsed in mid- to end-2010s and is now recovering with new private sector investments. Chad is currently the second-largest producer and exporter of crude gum arabic in the world, trailing Sudan—the leading producer that exported 5 times as much as Chad in 2016. The country needs, therefore, to go beyond cotton production and embrace its comparative advantage in other crops, including developing its sesame and gum arabic production and value chains.

Agroecological Zones and Natural Resource Potential for Agriculture and Farm Activities

Chad has three bioclimatic zones that are associated with three broad agricultural systems (FAO 2005; FAO and European Union 2017). The Saharan or desert zone in the north represents 47 percent of the surface of Chad. This zone is characterized by rainfall of less than or equal to 100 mm/year; a complex oasis system associated with the production of dates; irrigated subsistence agriculture; small sedentary livestock farming; and transhumant camel breeding. This area is home to 2 percent of the country's population. In the center of the country, the Sahelian zone represents 43 percent of the territory and is characterized by rainfall varying between 100 and 600 mm/year; an agro-pastoral vocation; and breeding areas, although agriculture is also present. It is home to 51 percent of the total population. Finally, the Sudanese place in the south covers about 10 percent of the territory and is characterized by rainfall varying between 600 and 1200 mm/year and diversified production systems, combining food crops and cotton cultivation with the breeding of small ruminant cattle, pigs, and poultry.

Figure 2.1 Chad's Agro-Ecological Zones

Source: *FAO Country Profile, http://www.fao.org/countryprofiles/maps/map/en/?iso3=TCD&mapID=601.*

17 According to the Chad Country Private Sector Diagnostic 2022 and the Chad Systematic Country Diagnostic Update 2022 (World Bank 2022c).

The country's agro-ecological diversity constitutes a potential for crop diversification, and its herd (excluding poultry) is estimated at around 94 million heads. In the north, the semi-arid rangelands of the Sahel provide pasture for livestock during the rainy season. Chad is endowed with considerable pastoral resources, covering over 79 million ha of natural pastures. There are more than 1.4 million pastoral households in the country, with a total pastoral population estimated at 7.6 million people. Most of Chad's cash and food crops are, however, produced in its more fertile lands in the south. The country is endowed with abundant land and water resources. While there is high potential to grow the agriculture sector, it is not being realized, which is a critical development challenge and key constraint to poverty reduction (World Bank 2020).[18]

The state of agricultural value chains in Chad

Agricultural value chains hold a sizeable economic development potential by creating jobs in both the farm and off-farm economy (Jayne, Chamberlin, and Benfica 2018; Thurlow 2021). The potential of agricultural value chains goes further than the primary production of agricultural products. In fact, a complete value chain encompasses: (i) the input supplied to farmers and food processing firms, which may be imported; (ii) individuals and firms aggregating the agricultural production to sell it to processing firms; (iii) processing firms that sell products to traders; and (iv) traders that either export the products or sell them to the service industry (e.g., restaurants, bars, or hotels). This process leads to job creation, as multiple services at different points along the agricultural value chain are created, from the production to consumption of food. As a result, the more modern and complex the value chain, the larger the number and types of services needed (Jayne, Chamberlin, and Benfica, 2018; Thurlow, 2021).

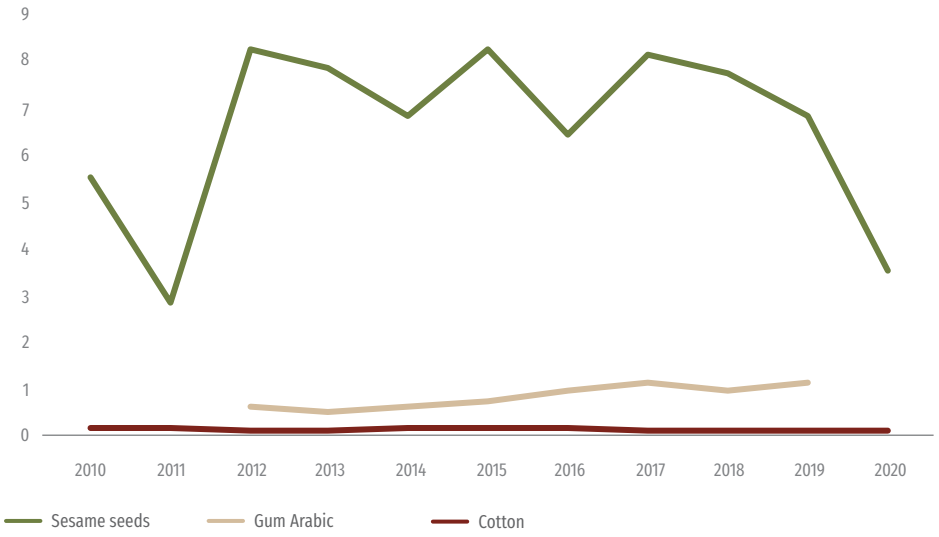
Agricultural Value Chains: Gum Arabic and Sesame

In Chad, agricultural value chains remain underdeveloped for cash crops and limited for food crops. The country's cash crops destined for exports include cotton, sesame, gum arabic, tobacco, groundnut, and sugar cane. Food crops include rice, maize, millet, and sorghum for grain crops. Wheat, potato, casava, and beans are also important food crops, especially for the country's food security. Chad's top three crop exports are gum arabic, sesame seeds, and cotton, although they represent a small share of their respective global markets.

Chad also has a solid revealed comparative advantage in sesame seeds and gum arabic, but the country needs to further develop their value chains to fully benefit from their potential. In the case of sesame, the global and regional markets are growing more rapidly than for any other sector. Sesame seeds and gum arabic have shown the potential to increase the purchasing power of rural farmers and entrepreneurs. Farmers have increasingly switched from cotton production to sesame, given that the two crops use similar nutrients and, as a result, cannot be farmed together on the same land. In contrast to cotton, sesame seed trading is decentralized,

18 Estimates from the World Bank and Chad's Ministry of Agriculture (2014) suggest that Chad has: (i) 39 million ha of cultivable land (30 percent of the territory), including 19 million ha of arable land, composed of 13.3 million ha cleared for agriculture and 5.6 million ha with irrigation potential, of which 435,000 ha can be easily irrigated; (ii) 84 million ha of natural pasture land and 23.3 million ha of natural forest formations, which provide feed for a population of over 20 million ruminants as well as shelter for a still plentiful and varied fauna that constitutes a significant source of biodiversity.

Figure 2.2 Chad's Crop Exports by Global Market Share (Share of Global Export Value, %)



Source: *WITS 2021.*

meaning it is being bought by multiple buyers, offering a greater likelihood of competitive price setting. Another advantage of investment in the sesame sector is that traders, wholesalers, and exporters typically also export gum arabic. Though the global market for gum arabic has been stagnant, there are substantial opportunities for domestic value addition, following the example of neighboring Sudan.

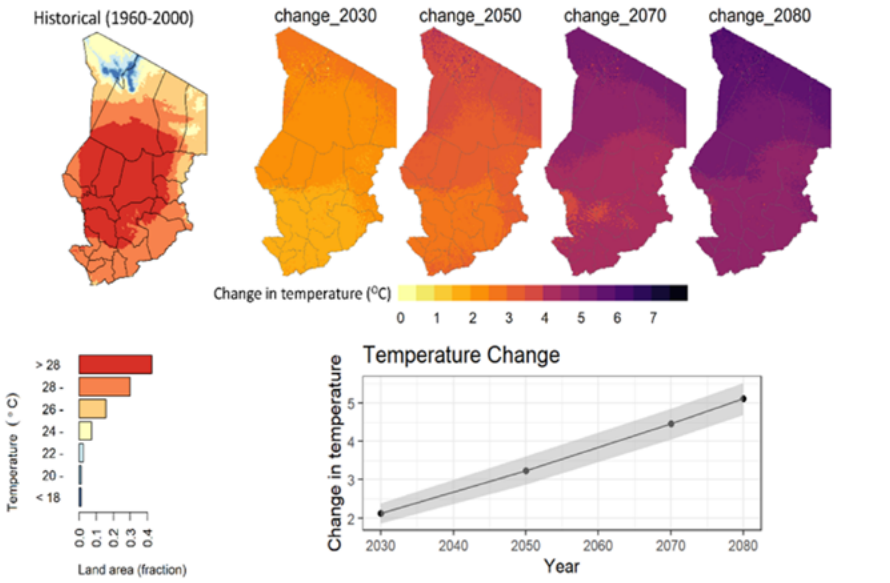
The country's sesame and gum arabic value chains are underdeveloped. Seeds are made available by the Chadian Institute of Agricultural Research for Development and through aid projects. They are supplied via informal cross-border trade or through seed multiplication generated from the previous harvest, with yield drastically declining after second- and third-generation seeds. Regarding gum arabic, only a section of its value chain occurs in Chad, and no important value addition such as processing or manufacturing occurs in the country. While some harvesters are loosely structured in village cooperatives launched by aid projects, it is difficult to ascertain their numbers and location.

The development of sesame and gum arabic value chains suffers from weak regulation and management, inappropriate taxation, and lack of government support. First, there is no regulation on quality grading and traceability (e.g., hand-picked-selected or HPS grade), and the absence of sorting facilities reduces quality. The weak organization of the sector also contributes to the limited bargaining power of producers. Second, there is no program to manage forests (such as the forestry management program for Acacia in Senegal), which contributes to the overexploitation of wild trees. Third, these products suffer from an inappropriate taxation policy. For example, sesame exporters face significant local taxes, sometimes in each canton through which goods are being transited. Finally, government-managed inputs/fertilizers and training programs are all skewed toward cotton rather than sesame, as supporting sesame farmers is against the interest of CotonTchad—the parastatal Chadian company that has a monopoly on buying and exporting cotton.

Limits to Agricultural Productivity and Value Chain Creation

Chad's low agricultural productivity is due to a range of on-farm and off-farm constraints (World Bank 2020). Despite its good natural resource endowment, productivity in the country's agriculture sector has grown more slowly than in most other countries with similar agroclimatic conditions. On-farm constraints include: (i) low use of improved seeds and fertilizers (less than 5 percent of farmers use improved seeds and less than 2.5 percent use fertilizer); (ii) ineffective and under-resourced extension services (total of 712 extension agents for up to 11 million farmers); and (iii) insufficient use of techniques for the sustainable management of natural resources (e.g., land and water) for crops and livestock. Off-farm constraints include: (a) poorly developed input distribution systems; (b) high transportation costs; and (c) a weak private sector that limits the availability and raises the cost of improved inputs (especially seeds and fertilizer). In addition to limited access to transport, the general lack of essential infrastructure services in rural areas, namely energy, storage, and processing units, also constrains the development of on- and off-farm activities.

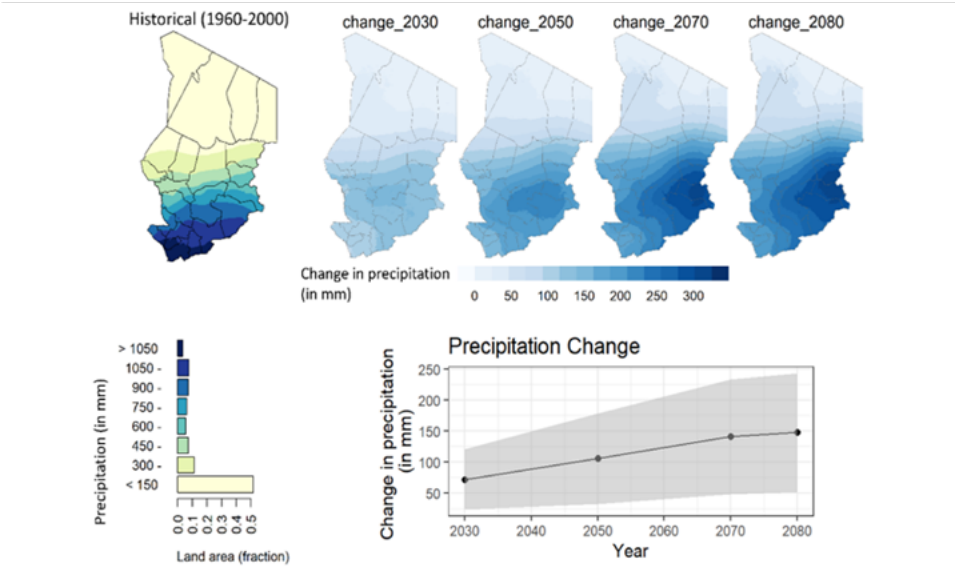
Figure 2.3 Projected Temperature Changes in Chad through 2080



Source: *World Bank/Food and Agriculture Organization (FAO) 2021.*

The weak institutional environment has reduced the country's capacity to improve agricultural productivity and support the development of value chains. Institutional constraints include but are not limited to: (i) land tenure insecurity (e.g., legislation on land, farmers, and herders, etc.), with less than 7,000 land titles, due to continuing reliance on traditional systems of land allocation and administration, which discourages investment in productivity-enhancing improvements; (ii) incomplete decentralization; (iii) a legal vacuum or the non-application of certain legal texts and their implementing decrees; (iv) insufficient access to essential social services (e.g., education, health, drinking water, hygiene, and sanitation); and (v) a continuing lack of concrete measures to better address major issues that impact food and nutritional security.

Figure 2.4 Projected Rainfall Changes in Chad through 2080



Source: *World Bank/FAO 2021.*

While the country has used oil revenues to focus on significant capital investments in the agriculture sector, these have not been integrated into a formal strategy. For example, the development of hydro-agricultural facilities and the deployment of more than 3,000 tractors to support the mechanization of agriculture were not in accordance with a formally developed and adapted strategy. As a result, about a third of the tractors and irrigated perimeters were estimated as broken or considerably degraded in 2016/17 (FAO/EU 2017). An agricultural program set up in 2006, the National Food Security Program, had the mandate to support the implementation of Chad's agricultural policy. It focused, however, on intensive agriculture and did not encompass any specific plans for smallholder agriculture, which represents the biggest part of the agriculture sector and the greatest potential to increase food security and employment.

Climate change is expected to substantially impact weather patterns in Chad (World Bank/FAO, 2021). Previous reviews of the country's agriculture sector have highlighted efforts that address the impacts of climate change as key to maintaining the stability of the sector and ensuring food security and Chad's sovereignty. It is estimated that the temperatures for the region where Chad is located will increase at a rate 1.5 times the global average (World Bank 2020). Alongside rising temperatures, precipitation is expected to increase across the country (Figure 2.3 and Figure 2.4). These changes could increase the severity of existing hazards (e.g., drought and floods), directly impacting Chad's agricultural capacity (FEWS NET and Government of Chad 2011). Estimates indicate an increase in potential land suitable for agriculture by 2050, but harvest yields could fall (World Bank/FAO 2021).[19]

19 Estimates use a crop suitability analysis to unpack these impacts per crop.

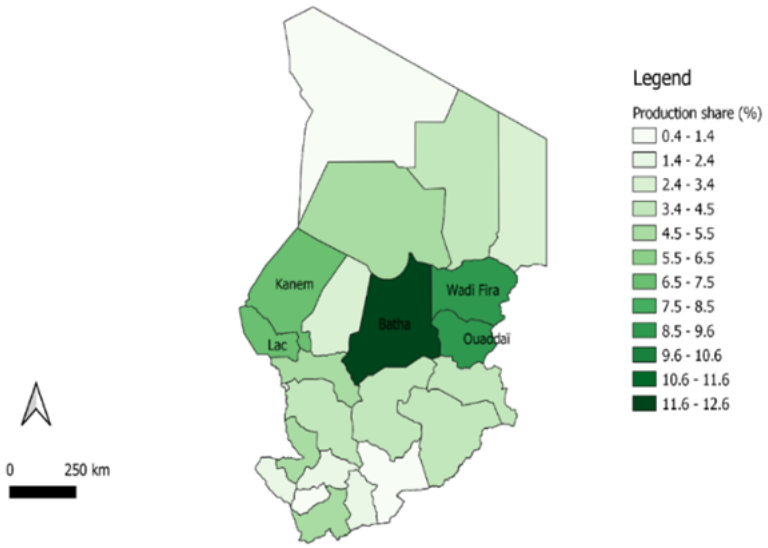
There is a growing need to develop farming practices and infrastructure to help mitigate the country's increasing weather volatility. Many regions in Chad rely on farming in flood plains to produce staple crops such as certain varieties of sorghum (FEWS NET and Government of Chad 2011). These regions will become susceptible to increases in unexpected flooding, resulting in loss of crops or changes to the length of the growing season. In addition, higher temperatures during the growing season can result in poorer soil quality and crop deaths. These impacts will be distributed disproportionately among the large portion of farmers who rely on rainfall for their crops (World Bank 2018). However, with only an estimated 7.8 percent of irrigable land currently using irrigation and extensive underutilized water resources, there are opportunities to increase farming capacity and efficiency in Chad (World Bank FAO 2021). Therefore, additional focus needs to be directed toward building resilience within the agricultural system to mitigate the impacts of changing weather patterns due to climate change and to ensure greater food security for the population of Chad.

2.2 Leveraging Chad's strong livestock potential

The country is endowed with a strong livestock potential

Livestock is Chad's most important non-oil sector, an important part of the agriculture sector, and a major income source. According to the 2015 General Livestock Census, the number of animal heads increased at an annual rate of 6 percent, on average, over the last decade. Livestock production is estimated at more than 120 million heads in 2019, with goats accounting for 32 percent of total heads, followed by sheep and cattle at 29 and 26 percent, respectively. The sector is characterized by low productivity, which prevents it from creating quality jobs and generating sufficient income for stakeholders. Weak infrastructure, limited technological capacity, and customs bottlenecks have long prevented the country from producing and exporting livestock and breeding products at its potential.

Figure 2.5. Livestock Production Map



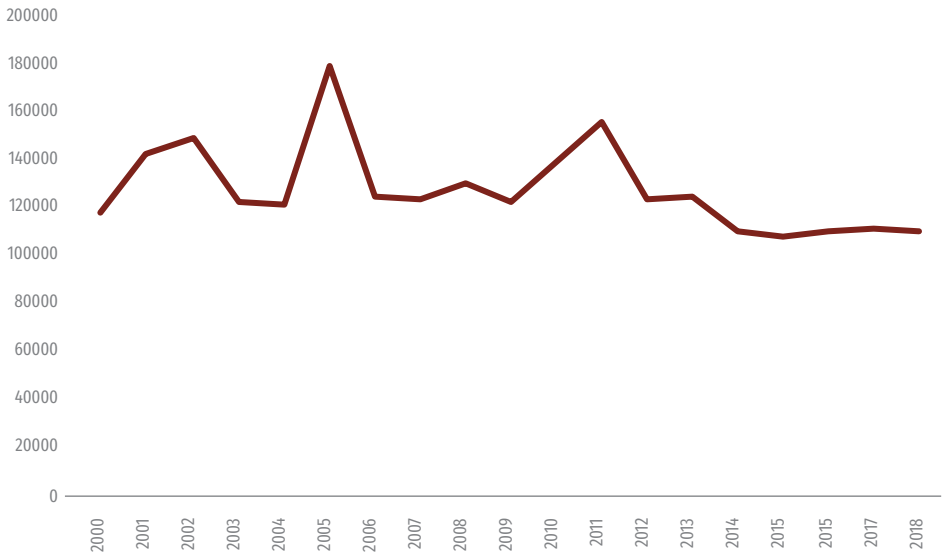
Source: *Livestock Census, 2012–15.*

Chad has around 25 million cattle, 26 million sheep, 30 million goats, and 6 million camels. According to the 2017 census, there are 1.4 million pastoral households in the country, with an average 5.4 members per pastoral household, or an affected population of 7.6 million (or nearly half of the country's population). The production of red meat is, until now, almost exclusively intended for own consumption (especially for small ruminants) and for sale on the national market, as meat exports are almost non-existent.

Livelihoods in rural areas are based mostly on subsistence farming and livestock rearing. During the dry season, pastoralists move south with their herds to feed on the leftovers of the agricultural harvest. Livestock represents 30 percent of exports, provides the livelihood for about 40 percent of the population (70 percent of the rural population), and is the second-largest source of income after oil (Ministry of Mining, Trade and Industrial Development, and Promotion of the Private Sector/FAO/EU 2017).

Yet, complex livestock value chains and insecurity in the region reduce the gains of producers and the competitiveness of Chadian cattle. Livestock value chains are complex, comprising multiple networks, relationships, and transactions. At each stage of the transaction, the animal or its product gains 'value' as its quality improves or as its delivery to the end consumer is made more efficient. The export of animals is subject to many taxes and levies, some of which have no legal basis or consideration for the service rendered. Export circuits have been severely disrupted by conflicts between farmers and breeders, as well as by insecurity in the region, mainly in northern Nigeria, Libya, and the Central African Republic. National livestock markets, which are essential elements of the marketing chain, are generally still poorly equipped.

Figure 2.6 Chad's Livestock Exports (in thousands of dollars)



Source: *FAOStat and World Bank estimates.*

State of livestock markets

The cross-border livestock trade is formed by segmented networks composed of groups seeking to maximize their interests. These various groups often have divergent and competing interests. Livestock trade networks are dominated by socially embedded business transactions, primarily government by agent-specific social networks (FAO 2015). Livestock value chains are complex, comprising multiple networks, relationships, and transactions.

Traditionally, Sahelian countries, which produce a surplus of livestock compared to their consumption needs, export to West African coastal countries that have meat deficits. Niger, Mali, Mauritania, and Burkina Faso preferentially supply the west and center corridors to Côte d'Ivoire, while Senegal, Ghana, Togo, Benin, and Chad mainly supply the east corridor to Nigeria. Chad is in competition with Niger, which has a slight comparative advantage due to a shorter travel distance. Although Nigeria is by far the main outlet for Chadian livestock, there are also exports of live animals (mainly camels) to Libya and Sudan, the magnitude of which is not well known due to the lack of border controls. There are also significant livestock exports to Cameroon (which are not transited to other destinations) and, by truck, to the Republic of Congo and Gabon.

Nigeria is a large market for Chadian livestock.[20] The country's livestock exports to Nigeria, the largest share of which is cattle, have remained relatively stable over the past two decades. Food and Agriculture Organization estimates indicate that Nigerian demand for cattle has been relatively stable, averaging around US$100 million per year, while the demand for sheep is lower and has varied over time, averaging below US$15 million per year. Nigerian goat imports have been declining since the start of the decade, from US$15 million in 2000 to US$1 million in 2017. While there are concerns voiced by the Nigerian government and the wider trading community about the need for potential import bans or restrictions, the Nigerian market is and will likely remain the privileged outlet for Chadian cattle for a long time. Therefore, Chadian authorities should prioritize this market by maximizing the efficiency of export networks and reducing trade obstacles to ensure the competitiveness of Chadian cattle in the region.

There is real potential to improve Chad's position in the livestock and edible meat and offal market. On the one hand, Chad's livestock production capacity is significant, with a preponderance of cattle. Moreover, this capacity is likely to be underestimated considering the large informal economy. Efforts to improve the logistics apparatus and restructure the sector could make it possible to increase the supply. On the other hand, with requests for meat and edible offal worth up to US$100 million in Nigeria and US$30 million in the Economic Community of Central African States per year, Chad will need to implement policies to ensure its competitiveness with other countries and, above all, the compliance of Chadian products with the regulatory requirements of importing countries, especially Nigeria. In addition, North and East African countries remain potential untapped markets that Chad can pursue should it improve its productivity and competitiveness.

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The country's livestock sector could benefit from better structuring of value chain interventions. The interventions could be done along four dimensions. The first dimension involves strengthening production capacity. To that effect, a differentiated approach should be tailored to each of three systems, namely the pastoral; the semi-sedentary (agro-pastoral); and the more intensive system in peri-urban fattening and ranches/state farms. The second dimension relates to the market structure, with the objective to empower traders to comply with standards and regulations and position themselves on national, regional, and international markets. The third dimension involves efforts to ensure cost-effective connectivity between production and consumption centers. This can be done by: (a) providing adequate means of transport of live animals and raw meat; (b) implementing measures to expedite and streamline procedures for crossing land and air borders; (c) constructing quarantine facilities; (d) eliminating tariff and non-tariff barriers; and (e) positioning traders in destination markets. Finally, the fourth dimension covers livestock-driven agro-industrialization, which will require investments to boost production, strengthen producer organizations, and comply with international standards (e.g., appropriate transport means for livestock and their products, modern slaughterhouses, laboratories, etc.).

2.3 Diversifying the economy through better agricultural and livestock value chains

The government should develop coordinated national strategies for the most important agricultural value chains. The country needs to go beyond cotton production as a cash crop and embrace its comparative advantage in other crops, including sesame and gum arabic. None of these other crops currently benefit from a national strategy, although they are important sources of income for smallholder farmers and women (Ngatia et al. 2020). These coordinated strategies could focus on: (i) investing in resilient varieties; (ii) researching agriculture practices; (iii) supporting the infrastructure and access to material for maintaining the quality of products; and (iv) empowering and leveraging farmer organizations to develop value chains.

To diversify the economy through an improvement of the country's value chains, the authorities should consider:

- **Incentivizing private investment in sesame and gum arabic value chains.** Material and infrastructure are needed to improve the sorting, quality, and storage conditions for sesame and gum arabic. Moreover, Chad needs access to a certification laboratory that guarantees a certain quality and, therefore, a price. This would require: (i) investing in a quality-grading and traceability system and forestry management, working through exporter and trader associations (e.g., hand-picked-selected or HPS grade); and (ii) diverting some subsidies for cotton exports to sesame to promote the use of fertilizers, certified seeds, or herbicides (e.g., through e-vouchers), which would support the resilience of farmers by diversifying their crop portfolios (World Bank 2022a).

- **Empowering and leveraging farmer organizations by elevating their role in value chain development.** All crops in Chad would benefit from the better organization of farmers and intermediaries along value chains. The country's three main cash crops would especially benefit from better access to inputs, with targeted

fertilizer management to preserve soil fertility and increase yields. Farmers also need access to better seeds, especially for sesame.

- **Increasing access to global data and analysis to improve decision-making and the implementation of targeted agricultural investment projects and policies.** Targeting investment projects to maximize impact in a resource-constrained environment requires access to relevant knowledge and data. While Chad is often presented as a data-scarce country, data are available from global sources. There are also a range of initiatives that have gathered what is commonly referred to as 'ground-truth data,' which could inform the Government of Chad about the country's current and future challenges and identify high-impact investment priorities.

- **Enhancing agricultural value chains, from production sites to border crossings along trade corridors and destination markets.**[21] Reforms should aim to: (i) ensure livestock exports are unrestricted and guarantee export price parity for pastoralists selling to slaughterhouses; (ii) enhance veterinary services and their inspection and certification capacity (e.g., expand and train a network of veterinary assistants to support sanitary measures and certification); ensure the quality of imported veterinary pharmaceuticals and their adequate use; and (iii) increase investments in infrastructure (including the cold chain and temperature-controlled logistics services) and promote the use of quality standards and certification (World Bank 2022b).

- **Implementing appropriate and selective public interventions in the agriculture and livestock sector to ensure the country realizes its potential.** The government should help organize smallholders to improve efficiency gains, enhance regulatory mechanisms, and refine taxation and tariffs to improve sector competitiveness. Finally, the government should partner with relevant stakeholders to provide the necessary infrastructure to farmers along value chains and support the improvement of food quality and standards.

21 Livestock sector operators need an adequate legal and regulatory framework consistent with international trade requirements, along with an optimal fiscal policy, to support the sector's modernization.

ANNEXES

Annex 1: Chad: Selected Economic Indicators, 2018-2024

Table 3.1 Chad: Selected Economic Indicators, 2018-2024

	2018	2019	2020	2021	2022[1]	2023	2024
			Estimates		Projections		
National income and prices	*Annual percentage change unless otherwise indicated*						
Real GDP	2.4	3.2	-1.6	-1.2	2.8	3.5	3.9
Real GDP per capita	-0.7	0.2	-4.5	-4.1	-0.1	0.6	1.0
Agriculture	-1.3	0.1	3.9	6.2	5.0	4.3	4.3
Industry	8.1	7.3	-0.1	-4.6	1.3	2.8	1.6
Services	1.0	2.5	-7.0	-4.4	2.1	3.3	5.6
Private Consumption	0.7	1.4	0.5	1.6	2.8	2.9	3.3
Government Consumption	-11.8	1.7	11.1	3.7	3.7	0.2	0.0
Gross Fixed Investment	5.4	6.6	-14.7	-4.5	0.7	5.3	7.2
Gross Fixed Investment - Private	1.2	1.7	-28.1	-16.8	6.1	7.1	10.4
Gross Fixed Investment - Public	25.1	25.0	26.1	16.7	-5.9	2.8	2.6
CPI (year-average)	4.0	-1.0	3.5	1.0	3.5	3.0	3.0
CPI (EOP)	4.4	-1.7	3.0	2.3	4.8	2.7	2.9
Money and credit	*Annual percentage change unless otherwise indicated*						
Exchange Rate (to US$, average)	555	586	574	574	...	...	...
Exchange Rate (to US$, EOP)	576	590	539	580	...	...	...
REER	4.3	-4.4	5.1	...	...	...	...
Broad money	4.5	24.4	17.6	11.3	1.7	1.0	1.6
Credit to economy	0.7	1.0	4.7	0.6	2.8	3.1	3.5
Credit to the government	-7.8	11.8	9.7	11.4	2.6	1.0	0.9
Public finance and debt	*Percent of GDP unless otherwise indicated*						
Total expenditure	13.1	13.9	19.7	20.1	18.9	18.3	17.7
Total revenue and grants	15	13	21	16	20	21	21
Overall balance (incl. grants)	1.5	-0.6	1.2	-4.3	1.2	3.2	3.1
Overall balance (excl. grants)	-1.3	-1.8	-3.3	-6.7	-0.9	0.7	0.6
Primary Fiscal Balance	3.0	1.0	2.9	-2.7	2.8	4.8	4.7
Total public debt	49.1	51.1	49.9	52.1	51.6	53.2	47.6
External public debt	25.9	24.6	25.8	28.2	31.9	38.7	40.3

	2018	2019	2020	2021	2022[1]	2023	2024
			Estimates		Projections		
Domestic public debt[2]	23.2	26.5	24.1	23.9	19.7	14.5	7.2
External Accounts	*Annual percentage change unless otherwise indicated*						
Export Growth (%, yoy)	4.6	6.0	1.1	-0.4	3.9	4.6	3.7
Import Growth (%, yoy)	1.4	4.0	1.8	5.1	3.5	4.0	3.0
Exports, Goods and Services	3324.3	3349.8	2406.6	3787.0	5254.6	4802.1	4548.9
Imports, Goods and Services	2471.3	2594.4	2599.6	2572.0	2788.0	3191.0	3529.0
CAD (incl. current transfer)	-4.7	-4.9	-7.8	-6.0	3.6	1.4	-2.1
Net FDI (% change)	4.2	4.3	3.6	3.5	3.8	4	4
Terms of Trade (% change)	8.2	-6.1	-24.4	42.7	-8.1	-2.8	-2.8
Population, Employment and Poverty							
Population, total (millions)	15.5	15.9	16.4	16.9	17.4	17.9	18.4
Unemployment Rate	1.9	1.9	2.3	2.3	2.3	2.3	2.3
Population Growth (annual %)	3	3.1	3.1	3	3	3	3
International poverty rate ($1.9 in 2011 PPP)[3]	33.2	33.1	35.5	37.8	37.9	37.6	36.9
Other memo items							
GDP nominal (CFAF billions)	6,243	6,630	6,167	6,532	6,789	7,132	7,580
GDP nominal (US$ billions)	11.2	11.3	10.7	11.4	11.8	12.4	13.1

Sources: *Chadian authorities, WEO, WDI, KNOMAD, IMF and World Bank Staff estimates and projections.*

ANNEX 2: Poverty Effect of Food Inflation - Methodology

The methodology used in this analysis relies on a demand system estimation to account for behavioral responses of households to a given change in food prices. More specifically, using the latest household budget survey in Sahel countries, a linearized Exact Affine Stone Index (EASI) implicit Marshallian demand system (Lewbel and Pendakur 2008; Pendakur 2009) is estimated to fit the survey data considering 11 (homogeneous) food categories. Based on the estimated demand system, the poverty effect due to a change in prices is easily derived by compensating variation for a given period of reference.

Let consider J food categories, and let w^j, p^j denote, respectively, the price and budget share of a given food category j, $j \in \{1,...,J\}$. The approximate EASI demand system is given by:

$$w^j = \sum_{r=1}^{R} b_j^r (\tilde{y})^r + \sum_{t=1}^{T} g_t z_t + \sum_{k=1}^{J} a^{jk} \log(p^k) + \varepsilon^j \quad (1)$$

For $j \in \{1,...,J\}$. $\{z_t, t=1,...,T\}$ is a set of household characteristics, and $\tilde{y}$, $\tilde{y} = \log(x) - \sum_{j=1}^{J} w^j \log(p^j)$ is the approximate implicit utility derived from the consumption of the J food categories, with x being household (per capita) expenditure. In contrast to most demand systems, the EASI model is flexible enough to account for the variety of shapes of the Engel curve that has been observed in the empirical literature on consumer expenditure data (Pendakur 2009). The shape of the Engel curve is captured by the coefficients b_j^r in equation (1). Besides, the EASI model accounts for unobserved preference utility, which has been shown to be important in explaining the observed variation in budget shares (Pendakur 2009).

Lewbel and Pendakur (2008) show that the approximate EASI model can be consistently estimated by an iterated linear estimation method with instrumental variables. The instrumental variables, which are functions of log(x), z_t, and p^j, are used to correct for the endogeneity problem in the model due to the presence of the budget shares at the right-hand side of equation (1) (via the implicit utility). Once the EASI model is estimated, the corresponding coefficients can be easily used to compute demand elasticities or compensating variation following a change in prices.

Demand elasticities and poverty effect of a change in prices

The estimated parameters from equation (1) provide the semi-elasticities of budget shares, defined as the derivatives of budget shares with respect to log prices, given by the a^{jk}, or implicit utility, given by the b_j^r. These semi-elasticities can be easily converted to ordinary demand elasticities by dividing by the corresponding budget shares (Pendakur 2009). For instance, own-price Hicksian (or compensated), η_j^j, and cross-price Hicksian elasticities, η_j^i, for given food categories j and i are derived as follow (Pendakur 2009; Tovar Reaños and Wölfing 2018):

$$\eta_j^j = \left(\frac{\partial w^j}{\partial \log(p^j)}\right)\frac{1}{w^j} - 1 \quad (4)$$

$$\eta_j^i = \left(\frac{\partial w^j}{\partial \log(p^i)}\right)\frac{1}{w^j} \quad (3)$$

The poverty effect following a change in prices can also easily be computed from the estimated model (1). Consider a change in prices from the price vector P_0 to the price vector P_1. Then, the change in income (or expenditure) by compensating variation can be computed as follow:

$$CV(P_0, P_1) = x - exp\left(log(x) + \sum_{j=1}^{J} w_j^0 \left(log(p_j^1) - log(p_j^0) \right) + \frac{1}{2} \sum_{j=1}^{J} \sum_{k=1}^{J} a^{jk} \left(log(p_j^1) - log(p_j^0) \right) \left(log(p_j^1) - log(p_j^0) \right) \right) \quad (4)$$

Note that $CV(P_0,P_1)$ is positive (negative) when prices decrease (increase). In presence of inflation (increase in prices), $CV(P_0,P_1)$ represents the additional amount that is needed to achieve the same level of utility as before the change in prices. In other words, relative to the reference price system, P_0, a typical household will be poorer by $CV(P_0,P_1)$ amount under the new price system, P_1 (Wood et al., 2012). The poverty headcount ratio (by compensating variation) under the new price system can therefore be computed as the share of people with their equivalent income or expenditure in period $1, x_1$-$CV(P_0,P_1)$, below the poverty line of the reference period. x_1 represents the nominal income in period 1, that is $x_1=x_0*(1+g_0^1)$ with g_0^1 being the growth rate of nominal incomes between periods 0 and 1. Note that the poverty line needs not to be updated in the new period, since the price effects are already captured through the compensating variation measure. That compensating variation results from household behavioral responses to the change in prices.

Based on the described methodology, a time series of poverty rate has been computed for the period 2019-2022, with the reference date (period 0) being 2018, the year of the most recent poverty survey implemented in Sahel countries. Three scenarios are considered for any single year of the period 2019-2022. The first measures the poverty rate associated with growth in incomes and no change in prices, that is $P_1=P_0$ and $CV(P_0,P_1)=0$. In other words, the prices in the subsequent years are considered the same as the price of 2018. The second scenario, in addition to incomes growth, considers a benchmark inflation rate, which has been set to the inflation level of 2018 for each of the years of the period. Finally, the last scenario, in addition to incomes growth, consider the realized or effective (projected for 2022) inflation for each year of the period.

Annex 3: Food Consumption Profile and Food Price Elasticities

3.3.1 Food Consumption Profile

Cereals (rice, millet, sorghum, and maize) are the most consumed food in Chad, and there is significant disparity across residential areas. Cereals represent 29 percent of Chadian households' food consumption, ranging from 30 percent for rural households to 25 percent for other urban households and 25 percent for households in N'Djamena. Among cereals, millet and sorghum are the most consumed, representing 16 percent of a Chadian household's food budget, and rural households that depend on agriculture allocate 18 percent of their food budget to these two cereals (Table 3.2). Unlike the other cereals, rice is primarily consumed in N'Djamena, representing 11 percent of these households' food budgets. There are also differences by poverty status. Nonpoor households allocate 27 percent of their food budgets to cereals, lower than 32 percent for poor households. Millet and sorghum alone represent 21 percent of poor households' food budgets. With respect to the quintile of welfare, the share of cereals in the total food consumed ranges from 32 percent for the poorest quintile to 22 percent for the richest quintile. In addition, the poorest households allocate more resources to millet and sorghum (22 percent), while the richest households consume more rice (8.7 percent).

Fruit, vegetables, and meat are Chadian households' most consumed non-cereals items, with some geographical disparities. Fruits and vegetables represent 17 percent and meat represents 10 percent of households' food consumption. However, households in Ndjamena allocate a greater part of their food budget to meat (15 percent) than households in other cities (12 percent) and rural areas (9 percent). They also consume more fish and seafood (8.5 percent) than rural households (6.3 percent). The share of fruits and vegetables in food consumption remains stable around 17 percent across welfare quintiles. Meanwhile, the share of meat in households' food consumption (10 percent) increases from 7.8 percent for the poorest households to almost 15.5 percent for the richest households.

Table 3.2 Households' Consumption Profile by Welfare Quintile, Poverty Status, and Areas of Residency (in percentage)

	Rice	Millet, Sorghum	Maize	Wheat	Meat	Dairy	Fish & seafood	Fruits, vegetables	Beverages	Oil	Other foods
Quintile of Welfare											
Poorest 20	4.7	22.1	4.6	0.6	7.8	2.1	6.6	17.0	4.2	7.0	23.4
Q2	7.0	17.1	4.5	1.2	9.8	3.4	6.3	17.4	4.3	6.3	22.8
Q3	8.6	12.5	5.2	1.7	11.2	4.0	6.9	17.5	4.4	6.0	22.0
Q4	8.4	10.2	4.1	2.4	12.4	4.9	7.4	17.6	5.3	5.6	21.7
Richest 20	8.7	6.3	3.8	3.2	15.5	6.5	7.0	17.2	6.4	4.9	20.4
Poverty status											
Bottom 40%	5.7	19.9	4.5	0.9	8.7	2.7	6.5	17.2	4.2	6.7	23.1
Top 60%	8.6	10.4	4.5	2.3	12.5	4.9	7.1	17.5	5.1	5.6	21.6
Poor	5.2	21.2	4.5	0.8	8.2	2.4	6.5	17.0	4.2	6.8	23.3
Non-poor	8.2	11.8	4.5	2.0	11.9	4.5	6.9	17.5	4.9	5.8	21.9
Place of residence											
Ndjamena	11.2	2.3	6.3	5.2	15.0	5.7	8.5	16.3	4.2	4.9	20.5
Other urban	7.8	10.8	4.3	2.3	12.2	3.9	8.0	18.5	5.2	5.7	21.4
Rural	6.3	18.4	4.4	0.8	9.4	3.3	6.3	17.2	4.5	6.5	22.9
Chad	7.0	15.7	4.5	1.5	10.4	3.6	6.7	17.3	4.6	6.2	22.5

Source: *World Bank staff calculations using data from ECOSIT 4.*

3.3.2 Food Price Elasticities

Inflation is likely to have more impact on rice demand than other cereals. Rice is the cereal with the highest elasticity, as a 1 percent increase in its price leads to a 2.2 percent decline in its consumption (Table 3.3). This is particularly pronounced for the poorest households, for which a 1 percent increase in rice price leads to a 2.6 percent decline in the quantity consumed. For millets and, a 1 percent increase in prices has a minimal impact on the quantity consumed (about 1 percent).

Except for fish, seafood, and beverages, the elasticities of quantities for non-cereals are below 1 percent. There is no significant difference between Ndjamena and other urban and rural areas for each of the non-cereals. Concerning the level of welfare, the elasticities increase for oil and beverage, decline for meat and dairy, and remain relatively stable for fruits and vegetables.

Table 3.3 Hicksian (Compensated) Elasticities of Quantities

	Rice	Millet, Sorghum	Maize	Wheat	Meat	Dairy	Fish & seafood	Fruits, vegetables	Beverages	Oil	Other foods
Quintile of Welfare											
Poorest 20	-2.64	-0.97	-1.27	-2.10	-0.47	-0.75	-1.25	-0.92	-1.40	-0.83	-1.05
Q2	-2.07	-0.96	-1.27	-1.53	-0.56	-0.84	-1.26	-0.92	-1.38	-0.82	-1.05
Q3	-1.89	-0.95	-1.24	-1.39	-0.61	-0.86	-1.24	-0.92	-1.38	-0.81	-1.06
Q4	-1.99	-0.94	-1.33	-1.30	-0.64	-0.89	-1.23	-0.92	-1.34	-0.79	-1.06
Richest 20	-1.99	-0.89	-1.35	-1.25	-0.69	-0.90	-1.26	-0.91	-1.29	-0.75	-1.07
Poverty status											
Bottom 40%	-2.33	-0.97	-1.27	-1.75	-0.52	-0.80	-1.25	-0.92	-1.39	-0.83	-1.05
Top 60%	-1.94	-0.94	-1.28	-1.32	-0.64	-0.88	-1.24	-0.92	-1.34	-0.79	-1.06
Poor	-2.45	-0.97	-1.28	-1.83	-0.49	-0.78	-1.25	-0.92	-1.39	-0.83	-1.05
Non-poor	-1.97	-0.95	-1.28	-1.36	-0.62	-0.87	-1.25	-0.92	-1.36	-0.80	-1.06
Place of residence											
Ndjamena	-1.87	-0.65	-1.25	-1.15	-0.64	-0.88	-1.24	-0.90	-1.48	-0.71	-1.07
Other urban	-2.07	-0.94	-1.31	-1.31	-0.61	-0.84	-1.22	-0.92	-1.35	-0.78	-1.06
Rural	-2.18	-0.97	-1.28	-1.74	-0.56	-0.84	-1.26	-0.92	-1.36	-0.83	-1.05
Chad	-2.13	-0.96	-1.28	-1.47	-0.58	-0.85	-1.25	-0.92	-1.37	-0.81	-1.06

Source: *World Bank staff calculations using data from ECOSIT 4 and CPI.*

In the event of an increase in the price of an item, Chad's households reduce the consumption of some products while increasing their demand for other products. However, the cross-price elasticities remain below 1 percent for all products. Concerning cereals, in the event of an increase in the price of rice, Chadian households rely on millet and sorghum to satisfy their need for cereals. Meanwhile, an increase in the price of maize leads to an increase in the consumption of millet and sorghum and a decline in the demand for rice.

Table 3.4 Cross-Price (Substitution -Hicksian or Compensated-) Elasticities of Quantities

	Rice	Millet, Sorghum	Maize	Wheat	Meat	Dairy	Fish & seafood	Fruits, vegetables	Beverages	Oil	Other foods
Rice	-2.13	0.89	-0.38	0.02	0.11	-0.06	-0.05	0.12	0.09	0.11	0.18
Millet/ sorghum	0.40	-0.96	0.15	0.07	-0.08	-0.06	0.03	-0.10	-0.05	-0.03	-0.08
Maize	-0.58	0.50	-1.28	0.09	0.09	0.00	-0.62	0.52	-0.01	0.13	-0.14
Wheat	0.10	0.85	0.30	-1.47	0.30	0.16	0.27	-0.05	0.13	-0.44	0.15
Meat	0.08	-0.13	0.04	0.04	-0.58	-0.05	0.00	-0.03	0.01	-0.04	-0.11
Dairy	-0.11	-0.25	0.00	0.06	-0.14	-0.85	-0.09	0.13	0.16	0.01	-0.03
Fish/Seafood	-0.05	0.07	-0.43	0.05	0.00	-0.05	-1.25	-0.04	-0.01	-0.04	-0.10
Fruits/ Vegetables	0.05	-0.09	0.14	0.00	-0.02	0.03	-0.02	-0.92	0.02	0.03	-0.08
Beverages	0.14	-0.17	-0.01	0.04	0.03	0.13	-0.02	0.06	-1.37	0.04	0.00
Oil	0.12	-0.08	0.10	-0.10	-0.07	0.01	-0.05	0.08	0.03	-0.81	-0.04
Other foods	0.06	-0.06	-0.03	0.01	-0.05	-0.01	-0.03	-0.06	0.00	-0.01	-1.06

Source: *World Bank staff calculations using data from ECOSIT 4 and CPI.*
Note: *For a cross-price elasticity, read change in quantities of row when price in column change.*

Fluctuations in international prices affect Chad and its population. The country relies on imports to complement national production, which relies on a few products and faces many constraints, particularly in the agriculture sector. While prices tend to be relatively stable, the recent change in international prices has affected the country. The CPI increased by 3.5 percent in 2020, 1 percent in 2021, and is expected to increase by 2.9 percent in 2022, which will have a negative impact on households' living conditions, particularly for the country's poorest and vulnerable households.

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