

Chad

Sectoral Scenarios for Chad

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Last updated 13 December 2023 using IFs v7.63

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Stability scenario

The Stability scenario represents reasonable but ambitious reductions in risk of regime instability and lower levels of internal conflict. Stability is generally a prerequisite for other aspects of development and this would encourage inflows of foreign direct investment (FDI) and improve business confidence. Better governance through the accountability that follows substantive democracy is modelled separately.

The intervention is explained [here](#) in the thematic part of the website.

Chad has been in a state of almost constant instability and protracted conflict since its independence in 1960. Recurrent political crises and violence that revolve around contestation for power have long undermined development in the country. [1] Additionally, the conflict dynamics in neighbouring countries exacerbate Chad's internal crises making the already conflict-prone country vulnerable to both national and regional instabilities. [2]

Political dysfunction has also affected the government's efficiency and effectiveness, which has resulted in poor service delivery on all socio-economic fronts including in the business environment. In 2019, for example, Chad was ranked 182 out of 190 economies in the World Bank's ease of doing business index. [3] Although Chad is open to investments, the lack of diversification in its economy is an added difficulty to starting new businesses and complicated tax procedures are major obstacles. The poor state of infrastructure, the narrow domestic market, shortage of skilled labour, lack of adequate protection of private property and fraud in property transactions also deter potential investors. [4]

Chad stands to benefit significantly from the Stability scenario. Improving the security situation would alleviate some of these challenges and give investors more certainty and confidence to invest in Chad.

In the Stability scenario (Chart 13), the security index improves from an index of 0.64 (comparable to the rest of low-income Africa) in 2019 to 0.95 by 2043 (slightly below the 0.96 forecast for low-income Africa).

Improvements in the security situation and a potential boost in FDI and overall ability of people to engage more dynamically in economic activity in the Stability scenario would result in improvements in the GDP per capita. By 2043, the average income could be US\$2 812, a US\$86 increase from the Current Path forecast of S\$2 726.

However, despite this improvement, Chad's per capita income in the Stability scenario would still be US\$1 163 below the low-income countries' average at US\$3 975 in 2043.

Improved incomes and other non-monetary improvements in Chad's economy would alleviate extreme poverty and suffering in the country.

However, poverty reduction is modest in the Stability scenario illustrating the importance of investing and attracting FDI to sectors that directly impact the lives of Chadians. Equitable distribution of oil and gas revenues is necessary to improve the living conditions of the people of Chad.

By 2043, poverty reduces by only 0.7 percentage points from 27.5% in the Current Path forecast to 26.8% in the Stability scenario. This represents around 244 000 fewer people living in extreme poverty by 2043. In 2019, poverty rates in Chad were 10.7 percentage points lower than the average of low-income Africa with 37.1% compared to 47.8%. By 2043, this picture is likely to shift with poverty rates in the Stability scenario being 3.5 percentage points higher in Chad compared to the average for low-income Africa.

Demographic scenario

This section presents the impact of a Demographic scenario that aims to hasten and increase the demographic dividend through reasonable but ambitious reductions in the communicable-disease burden for children under five, the maternal mortality ratio and increased access to modern contraception.

The intervention is explained [here](#) in the thematic part of the website.

Demographers typically differentiate between a first, second and even a third demographic dividend. We focus here on the contribution of the size of the labour force (between 15 and 64 years of age) relative to dependants (children and the elderly) as part of the first dividend. A window of opportunity opens when the ratio of the working-age population to dependants is equal to or surpasses 1.7.

Given Chad's youthful population, the country will require more time beyond the intervention horizon of 2043 to see a change in its population structure and to benefit from the gains that can be accrued from a large working-age population relative to dependants. By 2043 in the Demographic scenario, Chad's median age only reaches 19.4 years old. As such, the country's demographic dividend will only be at a ratio of 1.32 by 2043, which is 0.38 points below the 1.7 ratio threshold regarded as the optimum ratio for a country to experience rapid economic growth.

However, the Demographic scenario will still be an improvement from the projected ratio of 1.28 in the Current Path forecast.

The infant mortality rate is the number of infant deaths per 1 000 live births and is an important marker of the overall quality of the health system in a country.

Infant mortality is another important indicator of the strength of a country's health system. Chad suffers from a very high infant mortality rate, the third highest in Africa. In 2019, Chad had an estimate of 74.3 deaths per 1 000 live births, almost 26 deaths more than the average for low-income Africa that stood at 48.5. Improvements are expected in the Current Path forecast and deaths are likely to drop to 44.5 deaths per 1 000 live births by 2043 (Chart 17). The interventions of the Demographic scenario see Chad's infant mortality rate drop even further by 2043 to 35.7 deaths.

While this is a significant improvement, the country still lags behind the average for low-income Africa that sees a reduction to 16.9 deaths by 2043 in the Demographic scenario.

Owing to the slow-moving nature of changing the population structure of a country, gains in the GDP per capita will take much longer to show in Chad given its large youthful population and continued high fertility rates. By 2043, the average Chadian would have US\$38 more compared to the Current Path forecast at US\$2 726.

The Demographic scenario will have a positive impact on the poverty rate, but due to the country's population structure,

tangible reductions in poverty (US\$1.90 threshold) are only recorded later in the forecast horizon and are minimal.

The Demographic scenario reduces the poverty rate only slightly to 27.1% in 2043, compared to 27.5% in the Current Path forecast. The poverty rate reduction of 0.4 percentage points in the Demographic scenario reduces the number of people living in extreme poverty by 234 000 by 2043.

Health/WaSH scenario

This section presents reasonable but ambitious improvements in the Health/WaSH scenario, which include reductions in the mortality rate associated with both communicable diseases (e.g. AIDS, diarrhoea, malaria and respiratory infections) and non-communicable diseases (NCDs) (e.g. diabetes), as well as improvements in access to safe water and better sanitation. The acronym WaSH stands for water, sanitation and hygiene.

The intervention is explained [here](#) in the thematic part of the website.

The HDI uses life expectancy at birth as one of the measures to assess a country's well-being.

In 2019, life expectancy at birth in Chad was 59.4 years, making it the country with the fourth lowest average life expectancy among its income peers. This is 4.4 years lower than the average for low-income Africa at 63.8 years.

The relatively shorter life expectancy is a factor of high maternal and high infant mortality rates, as well as other communicable diseases that are prevalent because of low access to safe water and lack of improved sanitation and hygiene facilities.

By 2043, life expectancy in the Health/WaSH scenario is forecast to rise to 67.6 years compared to 66.6 in the Current Path forecast. Even with the improvement in life expectancy, Chad is forecast to lag behind the average for low-income African countries that are expected to reach 71.4 years in the Health/WaSH scenario.

The high infant mortality rate in Chad is linked to the high communicable-disease burden in the country, which is also driven by inadequate access to safe water and the lack of improved sanitation and hygiene in the country. Communicable diseases will, therefore, remain the major cause of infant deaths in the foreseeable future.

In the Health/WaSH scenario, infant mortality reduces to 39.2 deaths down from 44.5 in the Current Path forecast by 2043.

Agriculture scenario

The Agriculture scenario represents reasonable but ambitious increases in yields per hectare (reflecting better management and seed and fertilizer technology), increased land under irrigation and reduced loss and waste. Where appropriate, it includes an increase in calorie consumption, reflecting the prioritisation of food self-sufficiency above food exports as a desirable policy objective.

The intervention is explained [here](#) in the thematic part of the website.

The data on yield per hectare (in metric tons) is for crops but does not distinguish between different categories of crops.

Yields in Chad's agricultural sector have been very low due to the various constraints discussed in [Chart 9](#). In 2019, yields were estimated at 1.2 metric tons per hectare, less than half the yields estimated for the average for low-income countries in Africa. The low yields have affected food security in the country, and in 2019, at least 35% of Chad's population was considered stunted.

In the Agriculture scenario, yields improve from 1.2 metric tons per hectare in 2019 to 2.9 in 2043. This is 1.3 tons per hectare more compared to the Current Path forecast of 1.6 metric tons in 2043.

However, this increase will still be significantly below the average yields for low-income countries in Africa.

In 2019, total agricultural demand exceeded production by only 316 000 metric tons, accounting for a mere 2.6% import dependency. This is much lower than the average for low-income Africa that had an import dependency of 7.5% in 2019. In the Current Path forecast, demand is forecast to exceed production by 8.1 million metric tons, a significant and worrisome import dependency of 39.8% ([Chart 23](#)).

The Agriculture scenario will benefit Chad by increasing yields, reducing vulnerable rain-fed crops through irrigation schemes, reducing post-harvest losses and tapping into Chad's agricultural potential. In this scenario, Chad will produce 8.2 million metric tons more by 2043 than in the Current Path forecast. This will result in a lower import dependency of 17.4%; however, this is still much higher than the average for low-income Africa that could break their import dependency by 2043.

Given the importance of agriculture to the livelihoods of Chadians, improvements in the agricultural system would have significant increases in income and overall welfare.

By 2043, the GDP per capita of Chad is forecast to rise from US\$2 726 in the Current Path to US\$3 237 in the Agriculture scenario. By 2043, the Agriculture scenario significantly increases per capita income by US\$511, although Chad will still be lagging behind the US\$4 094 average of low-income countries in Africa.

For poor countries like Chad, agriculture is the quickest and most impactful way to alleviate extreme poverty and suffering. By 2043, only 21.6% of the population will be in extreme poverty compared to 27.5% in the Current Path forecast. This represents a difference of more than 2 million fewer people in extreme poverty at the US\$1.90 per person per day threshold.

Education scenario

The Education scenario represents reasonable but ambitious improved intake, transition and graduation rates from primary to tertiary levels and better quality of education. It also models substantive progress towards gender parity at all levels, additional vocational training at secondary school level and increases in the share of science and engineering graduates.

The intervention is explained [here](#) in the thematic part of the website.

Chad has one of the lowest educational attainment levels in the world. Primary enrolment rates, for example, are considerably lower than the average for low-income Africa and the continent as a whole. Severe bottlenecks exist in the primary and lower secondary stages of education, which constrain the attainment of subsequent levels of education to grow the overall stock of education in the population. Key among these issues are the high drop-out rates due to conflict and droughts, limited access to education facilities due to the dispersed nature of the population, low quality of basic education and the lack of qualified teachers. [5]

In addition, the Qur'anic schools associated with nomadic communities also face challenges that include fears of increased risk of radicalisation, particularly among male children because of the little government or community oversight in the running of the schools. The schools are also heavily Quran-focused; therefore, they do not offer the necessary skills needed for formal employment. [6]

Chad had the second lowest literacy levels globally in 2019 and records gender disparities in educational attainment. In 2019, on average, men received 2.4 years more education than women. The difference can be traced to the disproportionate social burden women bear in terms of early marriage that takes away from their years of schooling and gender-based violence like female genital mutilation.

Because of the poor education system, mean years of education for adults aged 15 years and over in Chad was the third lowest globally in 2019 at 3.4 years compared to 4.5 years for the Africa low-income countries' average. In the Education scenario, by 2043, Chad's mean years of education rise to 5 years against 4.5 years in the Current Path forecast.

Owing to the length of time it takes a country to improve and benefit from formal education, the government of Chad must move quickly to invest in the education of its population. Educational investment in the country's adult population is also essential due to the very high illiteracy levels.

Beyond quantity, the quality of education in Chad is also very poor. Poverty, conflict, limited resources and lack of adequate infrastructure all impede the quality of education that Chad can offer its population.

The Education scenario improves the quality of primary education from an average test score of 24.8 to 29.1 in 2043. The quality of secondary education improves from an average test score of 28.8 in the Current Path forecast to 34 in 2043.

The quality remains much lower than the average for low-income Africa and Africa as a whole with a growing gap throughout the forecast horizon.

Chart 28 displays the marginal impact of the Education scenario on GDP per capita in Chad. By 2043, the GDP per capita is expected to increase to US\$2 809 in the Education scenario, compared to US\$2 726 in the Current Path forecast. This represents a modest US\$83 in per capita income. The GDP per capita for Chad is expected to continue to lag behind its income peers, with a growing per capita income gap throughout to 2043.

In the Education scenario (Chart 29), it is expected that extreme poverty in Chad will decrease to 26.4% by 2043 compared to 27.5% in the Current Path forecast. The Education scenario has the potential therefore to lift an additional 425 000 people out of extreme poverty by 2043, compared to the Current Path forecast.

Manufacturing scenario

The Manufacturing/Transfers scenario represents reasonable but ambitious manufacturing growth through greater investment in the economy, investments in research and development, and promotion of the export of manufactured goods. It is accompanied by an increase in welfare transfers (social grants) to moderate the initial increases in inequality that are typically associated with a manufacturing transition. To this end, the scenario improves tax administration and increases government revenues.

The intervention is explained [here](#) in the thematic part of the website.

Chart 31 should be read with Chart 8 that presents a stacked area graph on the contribution to GDP and size, in billion US\$, of the Current Path economy for each of the sectors.

Chad's manufacturing industry is underdeveloped, and the country generally does not have a mechanism of social programmes to cushion its population from the harmful effects of poverty.

In the Manufacturing/Transfers scenario, the manufacturing sector will contribute an additional US\$1.2 billion to the GDP by 2043, representing a 1.2 percentage-point improvement compared to the Current Path forecast. This will result in the manufacturing sector making up 20% of the GDP in Chad by 2043.

The service sectors will continue to be the largest contributor to the economy. In the Manufacturing/Transfers scenario, the service sector will contribute an additional US\$1.8 billion to the GDP by 2043, representing a 0.9 percentage-point improvement compared to the Current Path forecast. This will result in the service sector making up 42.1% of the GDP in Chad by 2043.

The Manufacturing/Transfers scenario will also improve the contribution of the materials sectors adding an additional US\$200 million (0.1 percentage point) to the GDP by 2043 above the Current Path forecast.

The interventions in the Manufacturing/Transfers scenario will not benefit the other sectors. In fact, the scenario forecasts a decline in contributions compared to the Current Path forecast for the Energy, Agriculture and ICT sectors (Chart 30).

Generally, Chad, like most low-income countries, does not have a robust mechanism of social programmes to mitigate extreme poverty and inequality. In the Manufacturing/Transfer scenario, transfers to unskilled workers are increased from US\$2 billion in the Current Path forecast to US\$3.5 billion in 2043, a difference of US\$1.5 billion. However, government welfare transfers increase much more aggressively in the rest of low-income Africa.

The Manufacturing/Transfers scenarios would not only boost employment but also provide the poor with some basic income to meet their needs. The Manufacturing/Transfers scenario will have a modest impact on the GDP per capita in 2043, increasing it by US\$141 above the Current Path forecast. The GDP per capita is expected to increase to US\$2 867 in

this scenario compared to US\$2 726 in the Current Path forecast. In both the Current Path and the Manufacturing/Transfers scenarios, the GDP per capita will still be significantly below the average for low-income countries in Africa by 2043.

Increased social safety nets for the poor would reduce poverty and inequality and alleviate overall suffering. In addition, if well targeted and on a cash basis, the recipients would have more latitude to adequately address their needs and priorities.

Owing to the high poverty rate in the country, transfers would initially reduce the rate and number of people in extreme poverty in the country. However, a few years down the line, because of the intensive capital required to make investments in manufacturing and for the gains to be sustained through a social programme, poverty slightly rises before declining substantially from 2038 onwards. At this point, Chad is likely to have a robust manufacturing industry that benefits its population.

By 2043, the extreme poverty rate is 26% compared to the Current Path forecast at 27.5%. This translates to roughly 512 000 people lifted out of poverty in 2043.

Leapfrogging scenario

The Leapfrogging scenario represents a reasonable but ambitious adoption of and investment in renewable energy technologies, resulting in better access to electricity in urban and rural areas. The scenario includes accelerated access to mobile and fixed broadband and the adoption of modern technology that improves government efficiency and allows for the more rapid formalisation of the informal sector.

The intervention is explained [here](#) in the thematic part of the website.

Fixed broadband includes cable modem Internet connections, DSL Internet connections of at least 256 KB/s, fibre and other fixed broadband technology connections (such as satellite broadband Internet, ethernet local area networks, fixed-wireless access, wireless local area networks, WiMAX, etc.).

Infrastructure supports economic growth, regional integration and human development goals but infrastructure in Chad and the Sahel region in general lags significantly behind other regions of the world. Physical infrastructure such as roads and even ICT is limited but has been improving.

In 2019, Chad only had a fixed broadband subscription rate of 2.5 subscriptions per 100 people, below the average for Africa at 3.2 but above the average for low-income Africa at 2.3. In the Leapfrogging scenario, by 2043, Chad's fixed broadband subscriptions double to 49.8, up from 24.6 in the Current Path forecast, placing Chad above the average for Africa and low-income African countries by 2043.

Chad also has immense potential for scaling renewable energy sources, particularly solar and wind which could boost the rate of electricity access in the country, especially for the rural population. Investing in renewable energy sources could help Chad to bypass some of the traditional distribution that connects the national grid to the rest of the country. Mini and off-grid solutions like solar could also have positive outcomes on health and education as people would shift to cleaner cooking fuel and children could study longer.

Mobile broadband refers to wireless Internet access delivered through cellular towers to computers and other digital devices.

Chad has relatively low mobile phone ownership. Despite limited fixed-line infrastructure, there is massive potential for mobile broadband services in Chad. The spread and use of mobile phones has the potential to improve financial inclusion of rural populations who have no access to financial services through mobile money.

In Chad, only 4% of women compared to 12% of men have a bank account and only 4% compared to 7% of men have a mobile money account, meaning that the vast majority of Chadians, especially women, are excluded from financial services that could have life-enhancing benefits. Digital services can therefore help to accelerate financial inclusion in a relevant way that responds to the needs of the local population. [7]

In 2019, Chad only had 22.2 mobile broadband subscriptions per 100 people. This is projected to rise on par with the Current Path forecast and Chad only gets to 100 subscriptions around 2038, four years later than the average for low-income African countries. By 2043, in the Leapfrogging scenario, Chad is projected to have 115.9 subscriptions per 100

people compared to 114.6 in the Current Path forecast.

Despite being rich in energy resources, Chad has one of the lowest and most unreliable electricity supply networks in Africa and the world. In 2019, only about 2.3% of the rural population and 34.7% of those in urban areas had access to electricity.

In the Leapfrogging scenario, by 2043, rural access to electricity increases to 27.1% compared to 16.9% in the Current Path forecast. Urban access to electricity increases from 57.3% to 64.3% in 2043.

Nationally, access will only be 36.8% in the Leapfrogging scenario compared to the Current Path forecast of 27.4% — this represents 3.2 million more people with access to electricity in 2043. Despite the improvements, Chad's total access rate to electricity will remain below the average of African low-income countries.

Increased access to digital services and reliable energy significantly improves the welfare of Chadians. The GDP per capita improves from US\$2 726 in the Current Path forecast to US\$2 911, a US\$185 increase in income by 2043. This still falls significantly short of the average for low-income Africa that is forecast to be US\$4 130 by 2043 in the Leapfrogging scenario.

Poverty reduces modestly in the Leapfrogging scenario, and by 2043 26% of the population are forecast to be in extreme poverty compared to 27.5% in the Current Path forecast. This is an approximate reduction of 504 000 fewer people surviving on the US\$1.90 per day threshold.

Free Trade scenario

The Free Trade scenario represents the impact of the full implementation of the African Continental Free Trade Area (AfCFTA) by 2034 through increases in exports, improved productivity and increased trade and economic freedom.

The intervention is explained [here](#) in the thematic part of the website.

The trade balance is the difference between the value of a country's exports and its imports. A country that imports more goods and services than it exports in terms of value has a trade deficit, while a country that exports more goods and services than it imports has a trade surplus.

Chart 39 displays the trade balance as a per cent of GDP for the Current Path forecast and for the Free Trade scenario. Chad's trade deficit in 2019 stood at 8.4% of GDP. In 2019, Chad imported goods to the value of US\$5.4 billion while exporting goods to the value of US\$4.2 billion.

The longer-term forecast shows improved exports with a trade deficit at 5.2% in 2043 in the Current Path forecast. The full implementation of the AfCFTA not only enables countries to export more easily but also opens them up to increased imports, endangering those sectors where they lack competitive advantage. In the Free Trade scenario, Chad's trade balance improves to a deficit of 3.3% by 2043.

Chart 40 displays the modest impact of the Free Trade scenario on the GDP per capita in Chad. By 2043, the GDP per capita is expected to increase to US\$2 959 in the Free Trade scenario, compared to US\$2 726 in the Current Path forecast, an increase of US\$233 per capita. The GDP per capita for Chad is expected to continue to lag behind its income peers, with a growing per capita income gap from 2030 onwards.

Increased trade does not initially reduce poverty in Chad owing to the fact that trade is largely a national phenomenon and Chad's trading goods are concentrated around high-value commodities that would typically attract rent-seeking and political patronage to participate. These commodities are out of reach for the average Chadian, they do not have direct benefits for the population and the distribution of resulting revenues does not necessarily trickle down to the poor.

Therefore, to make an impact on the population, Chad needs to trade in commodities that impact the lives of its people. In addition, revenue from trade of goods such as crude petroleum should be used to advance pro-poor policies to provide basic needs and services and to lift Chadians out of extreme poverty.

Therefore, in the Free Trade scenario, it is only after 2035 that extreme poverty modestly declines to 26.4% by 2043, just more than a percentage point below the Current Path forecast and represents 363 000 fewer people in extreme poverty.

Financial Flows scenario

The Financial Flows scenario represents a reasonable but ambitious increase in worker remittances and aid flows to poor countries, and an increase in the stock of foreign direct investment (FDI) and additional portfolio investment inflows to middle-income countries. We also reduced outward financial flows to emulate a reduction in illicit financial outflows.

The intervention is explained [here](#) in the thematic part of the website.

As a result of Chad's underdevelopment, it receives significant foreign aid, especially humanitarian aid. Chad also hosts more refugees per capita than any other African nation. Therefore, humanitarian assistance alleviates human suffering while contributing to stability in the country and in the region. [8]

Net official development assistance and official aid has been increasing in Chad since 1960. In 2019, foreign aid contributed 8.6% to Chad's GDP — a value of US\$1.3 billion.

In the Financial Flows scenario, by 2033, foreign aid will account for nearly 8% of the GDP compared to nearly 7% in the Current Path forecast. In the foreseeable future, aid is projected to slightly decline, and by 2043, foreign aid to Chad will constitute 6.5% of GDP relative to 5.8% in the Current Path forecast. This will, however, still be higher than the expected contribution of aid to the economy of low-income countries in Africa in 2043.

FDI to Chad largely goes to the hydrocarbon industry although the government is making efforts to attract more FDI towards infrastructure projects. Additionally, FDI to other sectors could make significant progress towards inclusive and sustainable development in Chad. [9]

Chad is the second largest producer of gum arabic globally. It also produces sesame, shea, spirulina and groundnuts that can attract significant FDI. Furthermore, livestock, a major resource (and the third largest in Africa) and a significant contributor to the country's GDP, also has huge potential. Attracting investment to these sectors could, among other things, help overcome food security challenges in the country. [10]

In the Financial Flows scenario, FDI is expected to contribute about 5.7% of GDP in 2033 compared to 4.7% in the Current Path forecast. By 2043, the contribution of FDI to Chad's economy is expected to slightly decline to about 5.4% of GDP although this will be a boost from about 4.8% in the Current Path forecast in that year, placing it slightly above the average for low-income Africa.

In Chad, remittances are used to help families make ends meet and also to contribute to local development like the construction of key infrastructures in local communities. [11]

Given the low number of Chadians who send money home, net remittances in Chad are expected to reduce and be negative (i.e. there will be more money leaving the country than entering the country as remittances) by 2043. In 2019, net remittances were -US\$20 million and are projected to decrease further, reaching -US\$30 million in 2043 in the Financial Flows scenario.

The Financial Flows scenario makes a very small contribution to the increase of the GDP per capita. By 2043, the GDP per capita is expected to increase to US\$2 782 in the Financial Flows scenario, compared to US\$2 726 in the Current Path forecast, an increase of only US\$56 per capita. The GDP per capita for Chad is expected to continue to lag behind its income peers, with a growing per capita income gap from 2030 onwards.

Trade openness will reduce poverty in the long term after initially increasing it due to the redistributive effects of trade. Most African countries export primary commodities and low-tech manufacturing products, and therefore a continental free trade agreement (AfCFTA) that reduces tariffs and non-tariff barriers across Africa will increase competition among countries in primary commodities and low-tech manufacturing exports. Countries with inefficient, high-cost manufacturing sectors might be displaced as the AfCFTA is implemented, thereby pushing up poverty rates. In the long term, as the economy adjusts and produces and exports its comparatively advantaged (lower relative cost) goods and services, poverty rates will decline.

The Financial Flows scenario modestly reduces the rate of poverty from 2030 onwards, and by 2043, the rate of extreme poverty in Chad is expected to be approximately 26.7% compared to 27.5% in the Current Path forecast. The scenario has the potential therefore to lift an additional 271 000 people out of extreme poverty by 2043.

Infrastructure scenario

The Infrastructure scenario represents a reasonable but ambitious increase in infrastructure spending across Africa, focusing on basic infrastructure (roads, water, sanitation, electricity access and ICT) in low-income countries and increasing emphasis on advanced infrastructure (such as ports, airports, railway and electricity generation) in higher-income countries.

Note that health and sanitation infrastructure is included as part of the Health/WaSH scenario and that ICT infrastructure and more rapid uptake of renewables are part of the Leapfrogging scenario. The interventions there push directly on outcomes, whereas those modelled in this scenario increase infrastructure spending, indirectly boosting other forms of infrastructure, including that supporting health, sanitation and ICT.

The intervention is explained [here](#) in the thematic part of the website.

According to the UN, Chad and the Sahel region in general are endowed with significant potential for renewable energy (such as solar and wind). [12] Despite this potential, only 9.7% of the population in Chad had access to electricity in 2019. This is significantly lower than the average level of access for low-income countries in Africa at just over 32% in the same year. Rural populations in Chad had an extremely low electricity access rate of 2.3% in 2019 compared to the 19.1% access for the average of low-income countries in Africa.

In the Infrastructure scenario, electricity access increases modestly, and by 2043, 29.7% of the population (10.1 million people) will have access to electricity. This is a 2.3 percentage-point difference from the Current Path forecast in that year.

Indicator 9.1.1 in the Sustainable Development Goals refers to the proportion of the rural population who live within 2 km of an all-season road and is captured in the Rural Access Index.

Chad has a huge infrastructure deficit. The road network, both paved and unpaved, is very poorly maintained. In 2019, Chad had a total road network of just more than 43 000 km with approximately 1.5% paved, mostly in the capital city of N'Djamena. In 2019, only 16.1% of the population had access to an all-weather road, compared to an average of 43% for low-income countries in Africa. This is a significant obstacle to the country, as limited road access constrains access to critical services, delivery of aid and makes participating in economic activities much more difficult.

In the Infrastructure scenario, the per cent of rural population within 2 km access from an all-weather road increases to 24.5%, only 0.6 percentage points above the Current Path forecast in 2043 (Chart 48).

This points to the severe backlog in providing critical access roads as well as to the dispersed nature of the population in Chad ([Chart 4](#)).

Chart 49 displays the impact that the Infrastructure scenario will have on the GDP per capita in Chad. By 2043, the GDP per

capita is expected to increase to US\$2 770 in the Infrastructure scenario compared to US\$2 726 in the Current Path forecast, an increase of only US\$51 per capita. The GDP per capita for Chad is expected to continue to lag behind its income peers, with a growing per capita income gap from 2030 onwards.

The Infrastructure scenario barely impacts the rate of extreme poverty in Chad in the forecast horizon. This is likely because the country would need to make huge investments in infrastructure that are inherently expensive. Given Chad's infrastructure deficit and the fact that it is coming off a very low base, funds will be concentrated on such projects and this will come with a number of trade-offs in light of limited resources.

Governance scenario

The Governance scenario represents a reasonable but ambitious improvement in accountability and reduces corruption, and hence improves the quality of service delivery by government.

The intervention is explained [here](#) in the thematic part of the website.

As defined by the World Bank, government effectiveness 'captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies'.

Chart 51 presents the impact of the interventions in the Governance scenario on government effectiveness.

Good governance is a pillar for development and Chad's governance system is characterised by poor government effectiveness, corruption and political patronage. The state of governance in the country is a factor of historical challenges and persistent conflict and political crises within the country and in the region. As a result, poor governance has affected the level of development in the country.

The recent military take over does not lend credibility to Chad's future to build a democratic society. [13] Going forward, Chad needs to focus on the long-term stability of the country and augment the legitimate security challenges with a tangible economic development agenda to lift it out of the vicious cycle of underdevelopment and poor leadership.

Reducing corruption and wastage in the Chadian economy would have a significant impact on government effectiveness. It would mean increased ability of the government not only to raise revenue but also to use it efficiently to provide basic services for its population. In particular, the government would better use the proceeds from its oil revenues to improve the economy and infrastructure and alleviate the suffering of the Chadian people.

In the Governance scenario, the government effectiveness index improves from 1 in 2019 to 1.66 by 2043. This is an improvement over the Current Path forecast that is forecast to be 1.45 by 2043.

Although this will be an improvement of nearly 13% over the Current Path forecast in that year, Chad will still be lagging behind the average of low-income countries in Africa (Chart 51).

In the Governance scenario, the GDP per capita improves by US\$89 over the Current Path in 2043. Chad's per capita income will still, however, be significantly below the average of low-income countries in Africa (US\$3 917) by US\$1 102 in 2043 in this scenario.

The Governance scenario only starts to make modest improvements in poverty after 2033. By 2043, Chad's extreme poverty rate will be approximately 26.8% compared to 27.5% in the Current Path forecast. This will result in 247 000 fewer people living below US\$1.90 per day extreme poverty threshold.

Impact of scenarios on carbon emissions

This section presents projections for carbon emissions in the Current Path for [Chad] and the 11 scenarios. Note that IFs uses carbon equivalents rather than CO₂ equivalents.

When the thematic scenarios are compared against each other, the Agriculture scenario makes the greatest contribution to carbon emissions throughout the forecast horizon.

Chad's carbon emissions are projected to increase most in the Agriculture scenario, emitting an additional 9.5 million tons of carbon by 2043 compared to 2019, and 2 million tons of carbon more than the Current Path forecast for 2043. This increase is brought about by the increased agricultural production associated with this scenario.

In the Demographic scenario, emissions are forecast to be the lowest. In 2043, emissions in the Demographic scenario are likely to be 0.01 million metric tons less than emissions in the Current Path forecast for the same year. This is the result of a slightly smaller population in the Demographic scenario compared to the Current Path forecast.

Chad's carbon emissions are projected to increase most in the Agriculture scenario, emitting an additional 9.5 million tons of carbon by 2043 compared to 2019, and 2 million tons of carbon more.

Endnotes

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Cite this research

Alize le Roux (2024) Chad. Published online at futures.issafrica.org. Retrieved from <https://futures.issafrica.org/geographic/countries/chad/> [Online Resource] Updated 13 December 2023.

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Ms Alize le Roux joined the AFI in May 2021 as a senior researcher. Before joining the ISS, she worked as a principal geo-informatics researcher at the CSIR, supporting various local and national policy- and decision-makers with long-term planning support. Alize has 14 years of experience in spatial data analysis, disaster risk reduction and urban and regional modelling. She has a master's degree in geographical sciences from the University of Utrecht, specialising in multi-hazard risk assessments and spatial decision support systems.

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