



Sudan

Sectoral Scenarios for Sudan

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Last updated 13 December 2023 using IFs v7.63

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Sectoral Scenarios for Sudan

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- Infrastructure scenario
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- Impact of scenarios on carbon emissions

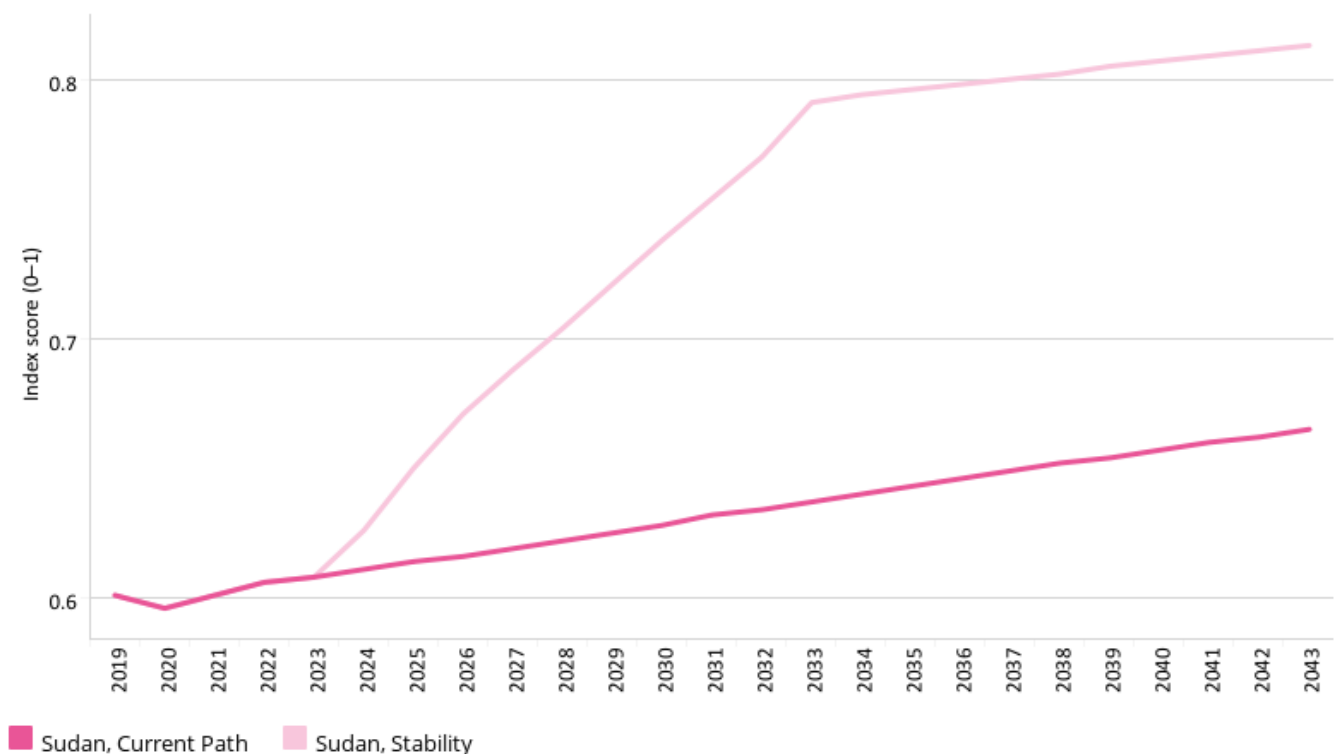


Stability scenario

Chart 13: Governance security in CP and Stability scenario, 2019–2043
IFs index 0–1



Sudan



Source: IFs 7.63 governance security index using internal war and government risk

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The Stability scenario represents reasonable but ambitious reductions in the 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.

Sudan has long been beset by conflict and instability. Two rounds of north-south civil war cost the lives of 1.5 million people, and a continuing conflict in the western region of Darfur has driven 2 million people from their homes and killed more than 200 000.[1] Also, continuous food price hikes and long-standing grievances over nearly 30 years of rule led to mass demonstrations starting in December 2018 and culminated in the removal of then-president al-Bashir from power in April 2019. This led to the formation of a transitional government in September 2019.

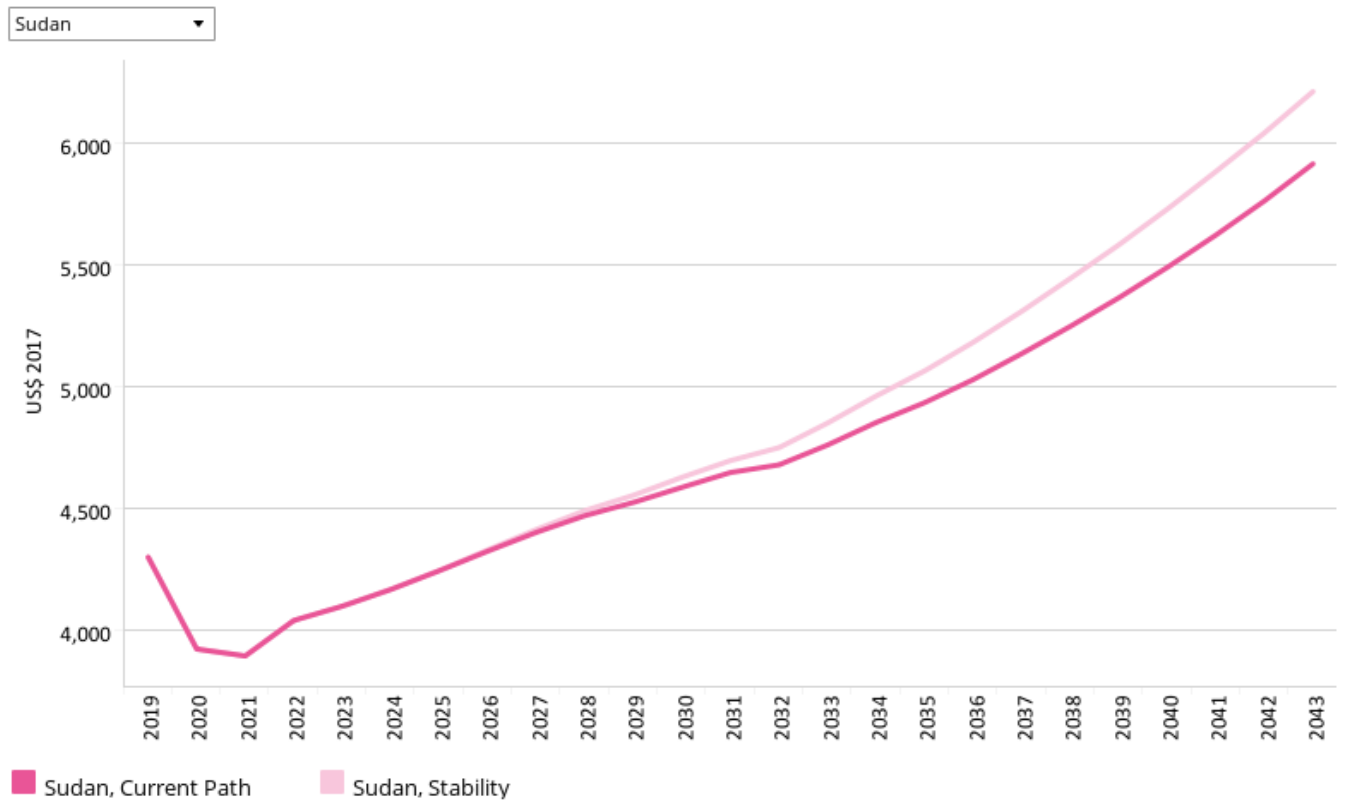
The Transitional Government of Sudan enacted ambitious economic and social reforms and engaged in peace negotiations with armed groups to address armed conflicts and grievances. This ultimately led to the signing of the Juba Peace Agreement with nearly all armed opposition in October 2020. Unfortunately, a military takeover took place in October 2021. Key government structures were dissolved and terms of the 2019 constitutional charter suspended. In early January 2022 the prime minister stepped down after his efforts to reach a political settlement between domestic stakeholders failed.

IFs' governance security index ranges from 0 (low security) to 1 (high security). The Current Path forecast shows lower stability in Sudan than the average for low-income Africa. The score for Sudan on the government security index was 0.60 in 2019 compared to 0.64 for Africa low-income countries.

The scenario improves security and stability in Sudan. By 2043, the score in the Stability scenario is 0.81, about 21% higher than the Current Path forecast and 14% higher than the projected average of 0.71 on the Current Path for African low-income countries.

A state's capacity to maintain order is the most important condition for development. The government and policymakers in Sudan should take proactive measures for more social and political stability.

Chart 14: GDP per capita in CP and Stability scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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Increased stability would promote peace and political consensus in the country and encourage more significant domestic and foreign investment, positively affecting income per capita growth.

Thus, by 2033 Sudan's GDP per capita would be US\$91 higher in the Stability scenario compared to the Current Path forecast for that year. In 2043, the difference would increase to US\$297, with Sudan recording a GDP per capita of US\$6 215 — 5% higher than the Current Path forecast of US\$5 918. However, Sudan's GDP per capita in the Stability scenario would be above the projected average for African low-income countries in 2043.

Chart 15: Poverty in CP and Stability scenario, 2019–2043
Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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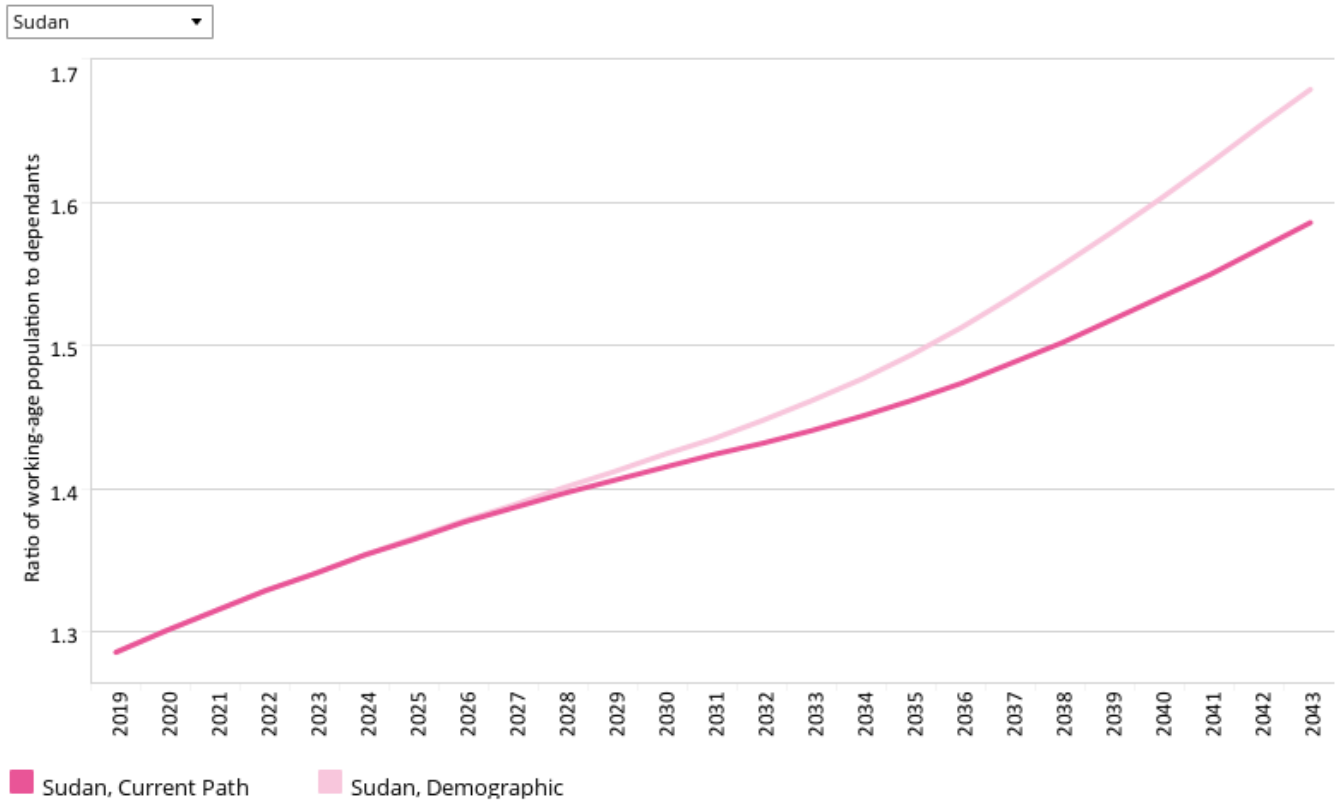
Stability in a country is an essential condition for economic growth and poverty reduction. When using the low-income countries' extreme poverty threshold of US\$1.90, 16.4 million Sudanese (38% of the population) were considered to be extremely poor in 2019.

In the Stability scenario, the number of poor people stands at 13.7 million (18.1% of the population) in 2043 compared to 16.4 million (21.7% of the population) in the Current Path forecast for that year — a difference of 2.7 million fewer people in extreme poverty. The poverty rate in the Stability scenario (at US\$1.90 per day) in 2043 is below the projected average of 25.2% for Africa low-income countries in the Current Path forecast.



Demographic scenario

Chart 16: Demographic dividend in CP and Demog scenario, 2019–2043
Ratio of working-age population to dependants



Source: IFs 7.63 initialising from UN Population Division Population Prospects

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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.

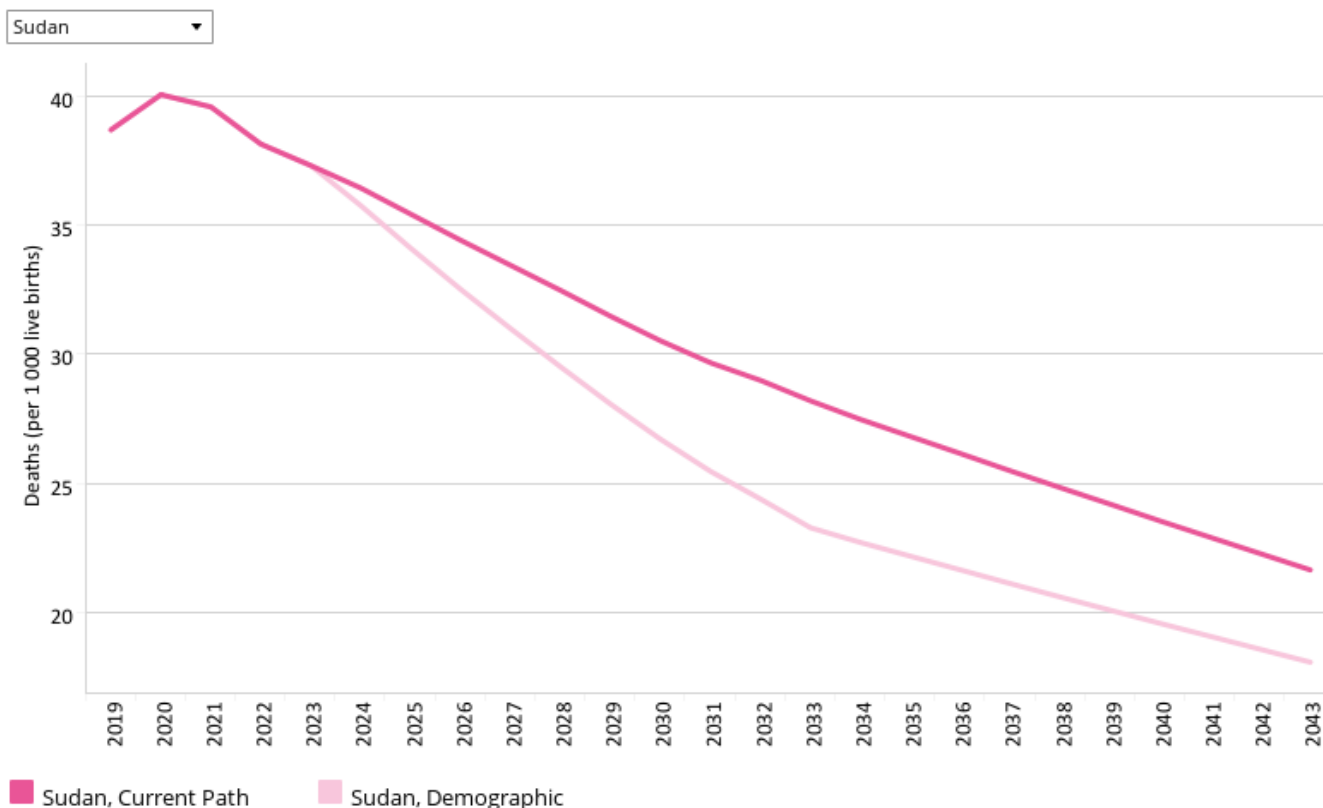
In 2019, the ratio of the working-age population to dependants stood at 1.3, meaning that there was almost one person of working age for each dependant. On the Current Path, it is forecast to be 1.6 by 2043. In the Demographic scenario, the working-age population to dependants ratio is 1.7, the minimum ratio required to expect the materialisation of the demographic dividend.

The increasing size of the working-age population in Sudan can be a catalyst for growth if sufficient education and employment is generated to successfully harness their productive power, otherwise it could turn into a demographic

'bomb', as many people of working age may remain in poverty, potentially creating frustration, social tension and conflict.

Chart 17: Infant mortality in CP and Demog scenario, 2019–2043

Deaths per 1 000 live births



Source: IFs 7.63 initialising from Institute for Health Metrics and Evaluation Mortality Visualization Tool data

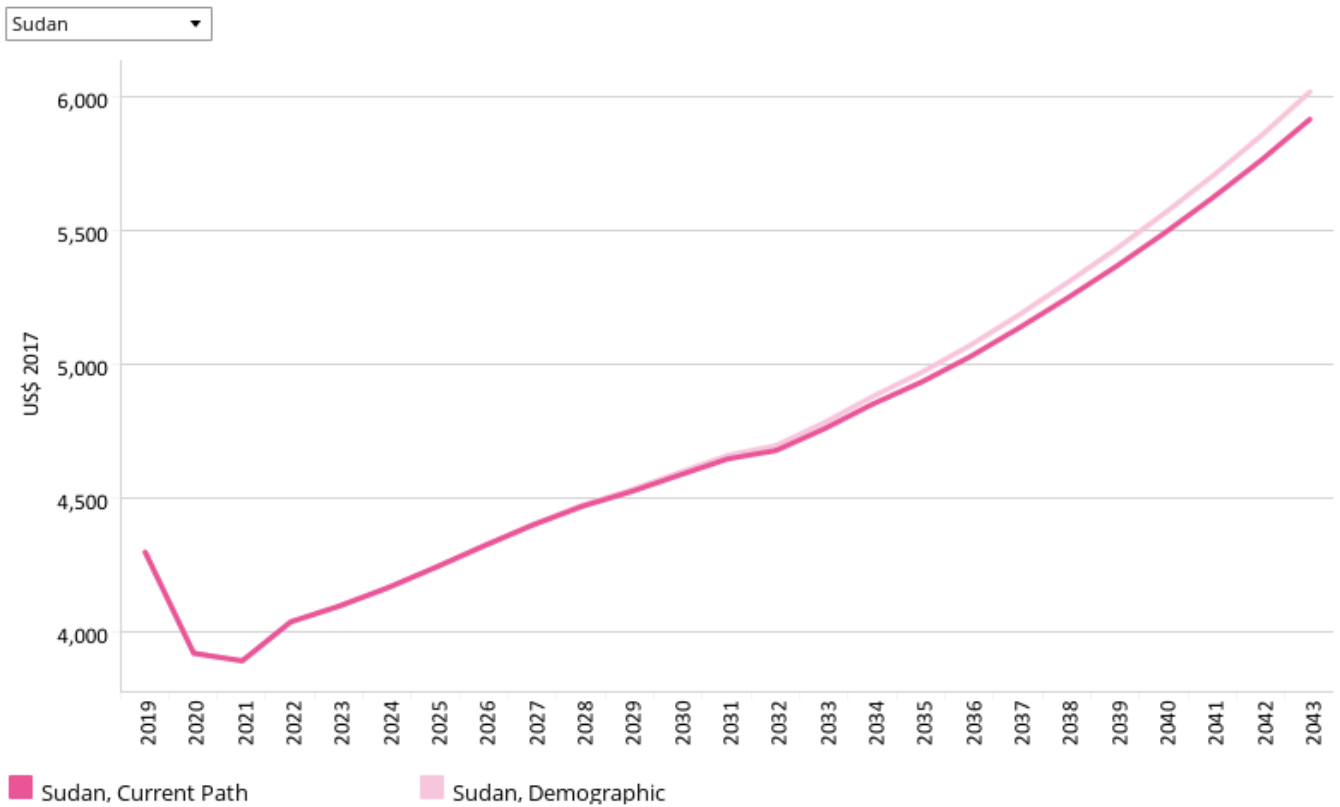
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The infant mortality rate is the number of infant deaths per 1 000 live births and is an important marker of the overall quality of the health system in a country.

As of 2019, the infant mortality rate in Sudan was 38.7 deaths per 1 000 live births, below the average of 48.5 for Africa's low-income countries. The Demographic scenario reduces infant mortality to 23.3 per 1 000 live births compared to 28.2 in the Current Path forecast by 2033. By 2043, the infant mortality rate will be 18.1 deaths per 1 000 live births in the Demographic scenario, compared to 21.7 in the Current Path forecast.

The infant mortality rate in the scenario is about 3 percentage points below the average for low-income countries in Africa at 21.2 deaths per 1 000 live births by 2043.

Chart 18: GDP per capita in CP and Demog scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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The Demographic scenario's impact on per capita income is marginal at US\$23 more than the Current Path forecast of US\$4 760 in 2033. By 2043, the average Sudanese will have about US\$102 more than in the Current Path forecast at US\$6 020 — a 1.7% improvement above the Current Path forecast. However, this would be US\$2 230 lower than the average for Africa low-income countries in the Current Path forecast in 2043.

Chart 19: Poverty in CP and Demog scenario, 2019–2043
Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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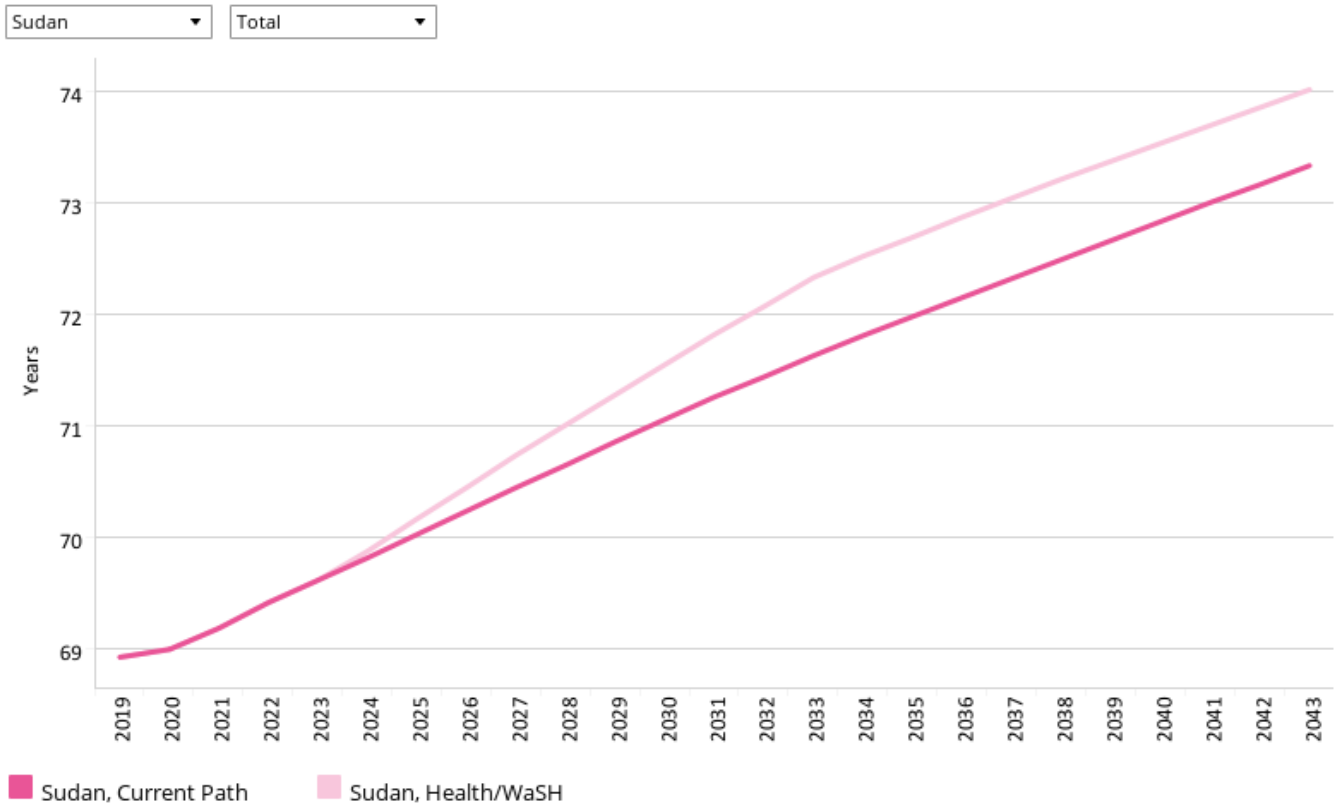
When using the low-income countries' extreme poverty threshold of US\$1.90, 16.4 million people in Sudan (38% of the population) were considered to be extremely poor in 2019. The number of poor people stands at 15.99 million (21.6% of the population) by 2043 in the Demographic scenario compared to 16.4 million people (21.7% of the population) in the Current Path forecast for that year, a difference of 400 000 fewer people in extreme poverty.

The poverty rate in the Demographic scenario in 2043 is below the Current Path forecast average of 25.1% for Africa low-income countries. Sudanese authorities should try to accelerate the demographic transition, which can be another source of growth and poverty reduction.



Health/WaSH scenario

Chart 20: Life expectancy in CP and Health/WaSH scenario, 2019–2043



Source: IFs 7.63 initialising from Institute for Health Metrics Evaluation GBD Foresight Tool data

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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 quality of a nation's health system can be gauged through indicators such as life expectancy, maternal mortality, and infant mortality, among others. Life expectancy in Sudan was 68.9 years in 2019, above the average of 63.7 years for low-income countries in Africa.

Based on the Health/WaSH scenario, life expectancy is estimated to increase to 74.2 years compared to 73.3 years in the Current Path forecast by 2043. In the Health/WaSH scenario, life expectancy in Sudan is more than 3 years above the projected average for low-income countries in Africa, at 70.8 years in 2043.

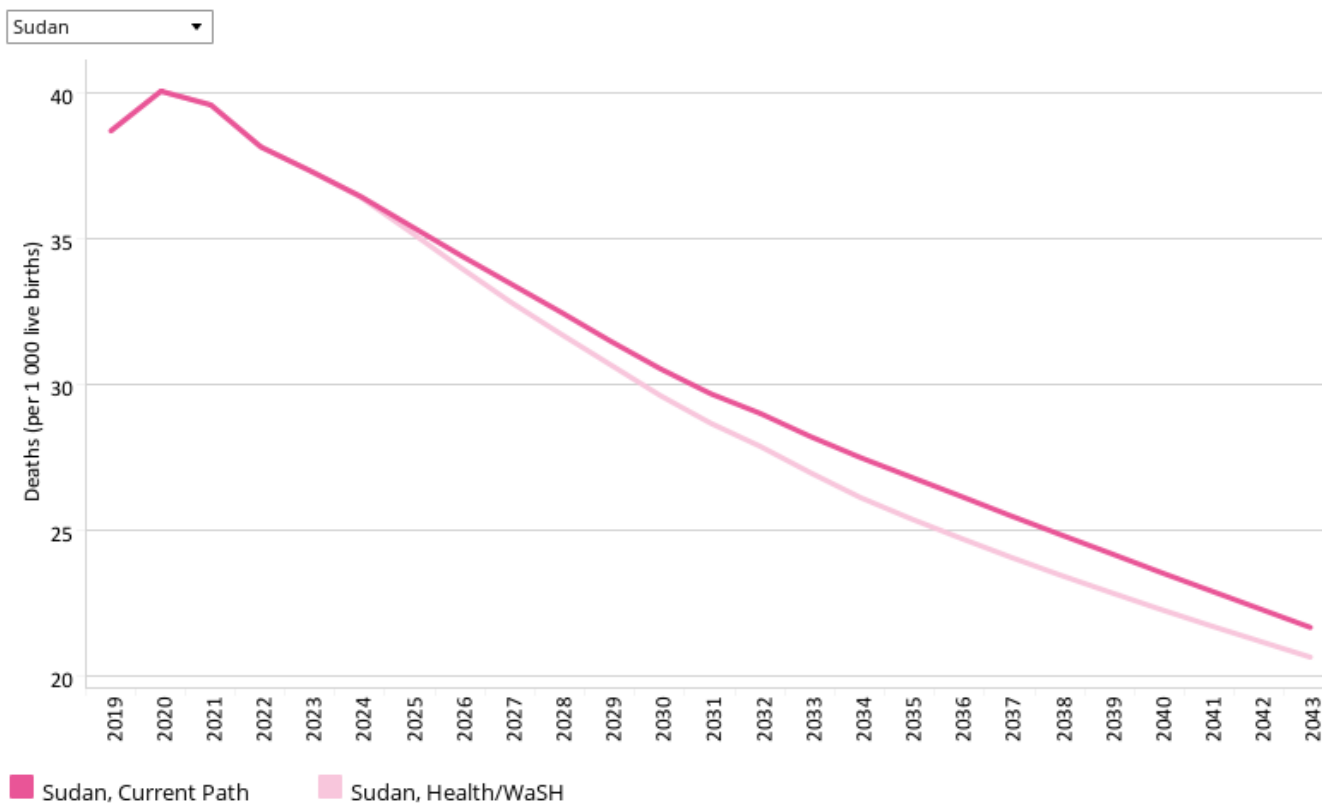
On average, females have a higher life expectancy at birth of 70.9 years compared to 66.9 years for males in 2019.

In the Health/WaSH scenario, life expectancy at birth for females is projected to be 76.5 years by 2043 compared to 71.5

years for males.

Chart 21: Infant mortality in CP and Health/WaSH scenario, 2019–2043

Deaths per 1 000 live births



Source: IFs 7.63 initialising from Institute for Health Metrics and Evaluation Mortality Visualization Tool data

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Poor access to health services, largely due to a limited number of health workers, affects health outcomes in Sudan.

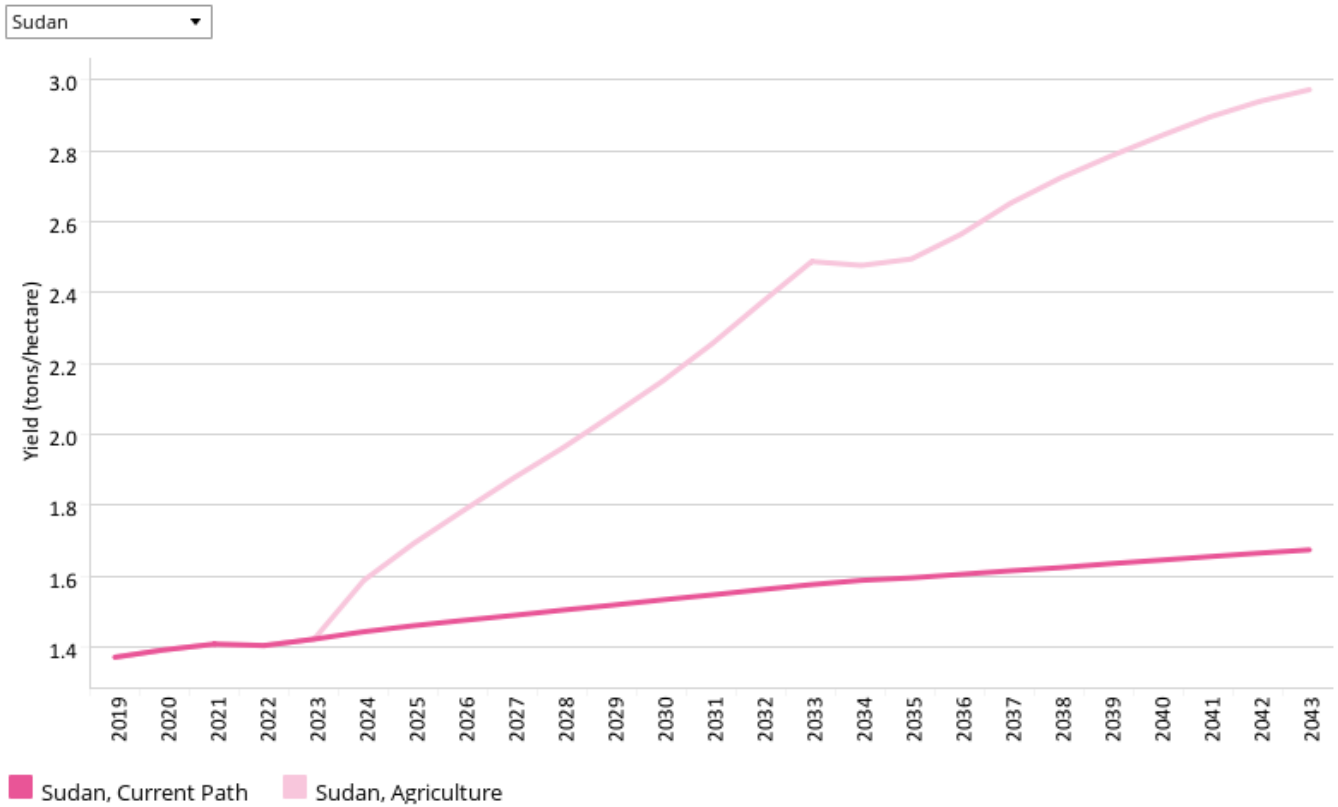
The infant mortality rate in Sudan was 38.7 deaths per 1 000 live births in 2019. The Health/WaSH scenario reduces infant mortality rate to 27 deaths per 1 000 live births compared to 27.5 in the Current Path forecast by 2033. By 2043, the infant mortality rate in the scenario is 20.6 deaths per 1 000 live births, compared to 21.7 in the Current Path forecast. The infant mortality rate in the scenario is slightly below the projected average of 21.2 for Africa low-income countries by 2043.



Agriculture scenario

Chart 22: Yield/hectare in CP and Agric scenario, 2019–2043

Pre-loss levels



Source: IFs 7.63 initialising from FAOSTAT on-line statistical service data

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The Agriculture scenario represents reasonable but ambitious increases in yields per hectare (reflecting better management and seed and fertiliser 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.

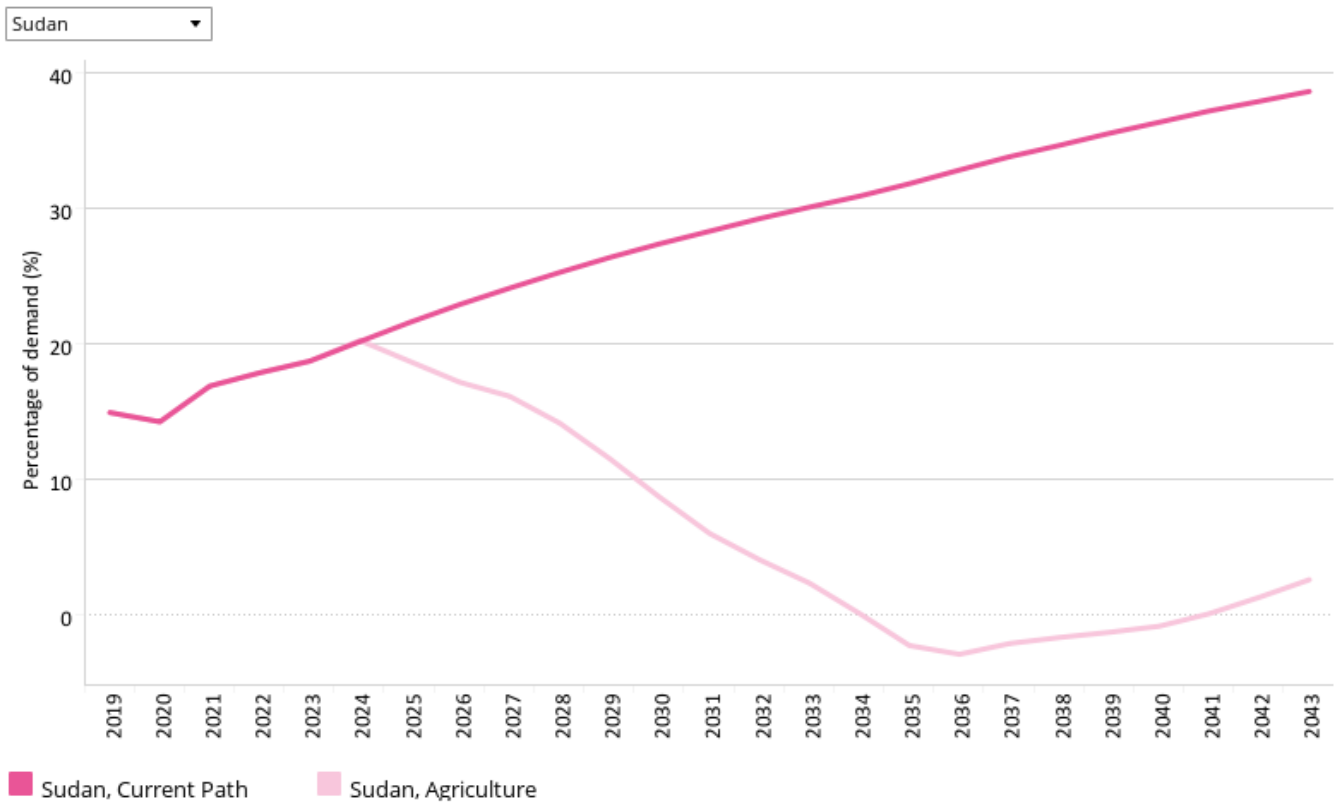
The intervention is explained [here](#) in the thematic part of the website.

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

Agriculture is the backbone of the Sudanese economy. The majority of Sudanese people live in rural areas and depend on agricultural production as the main source of their income and food security. As is the case in much of eastern Africa, farmers rely heavily on rain-fed crop production, meaning erratic or delayed rains can result in poor harvests. A lack of availability and access to quality seeds and planting materials constrains crop yields.

In the Agriculture scenario, crop yields in Sudan improve from 1.4 tons per hectare in 2019 to 2.97 tons per hectare in 2043, compared to 1.7 tons in the Current Path forecast. This is more than twice the value forecast on the Current Path in 2043. Average crop yields in the Agriculture scenario by 2043 are below the projected average for low-income Africa at 3.5 tons per hectare in the Current Path forecast for that year.

Chart 23: Agriculture imports in CP and Agric scenario, 2019–2043
 Net imports for meat, crops and fish, % of demand



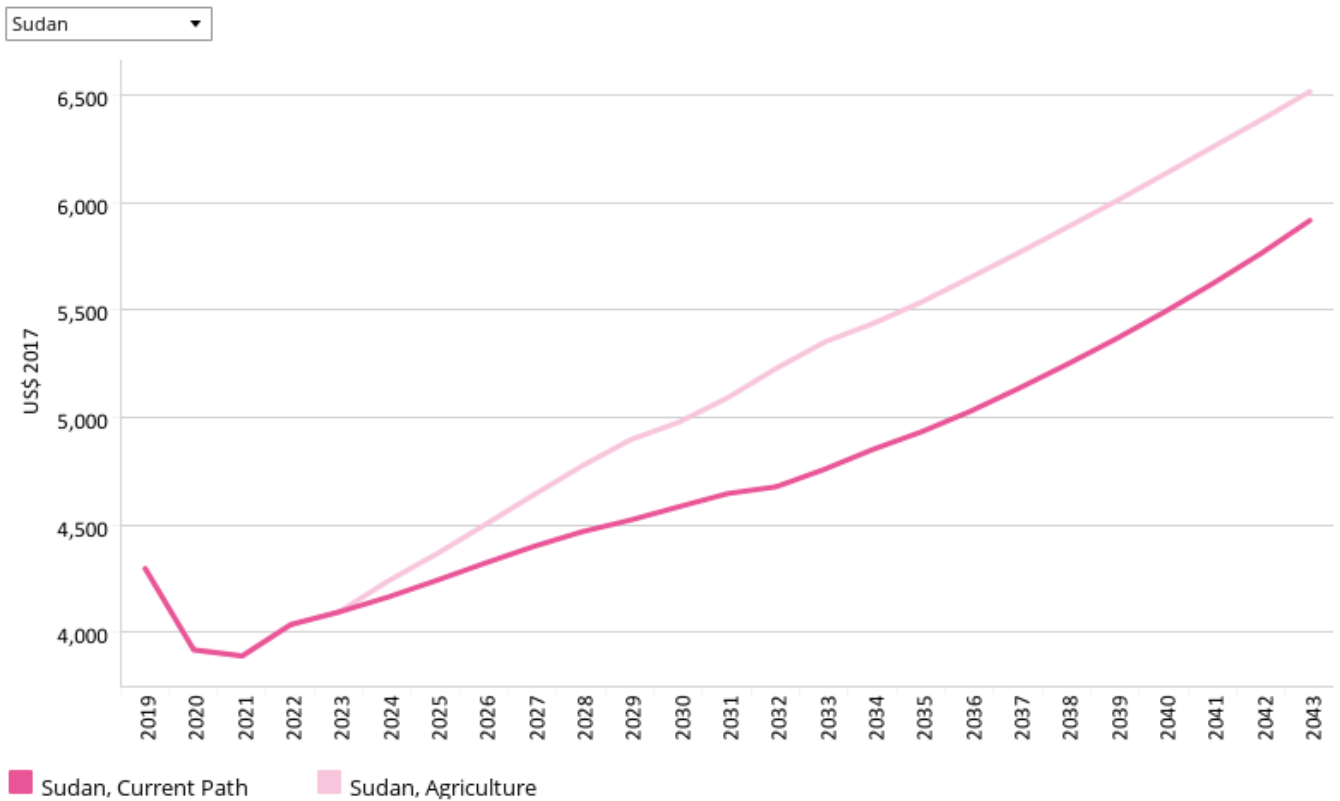
Source: IFs 7.63 initialising from Food and Agriculture Organization Food Balance Sheets data

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Without significant efforts to improve agricultural production, the current low crop yield will continue to make Sudan a net food importer for the foreseeable future. On the Current Path, food import dependence will be about 38.6% of total agricultural demand by 2043, up from 14.9% in 2019. However, in the Agriculture scenario, food import dependence significantly declines from 14.9% of total demand in 2019 to 2.6% by 2043.

Chart 24: GDP per capita in the CP and Agric scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

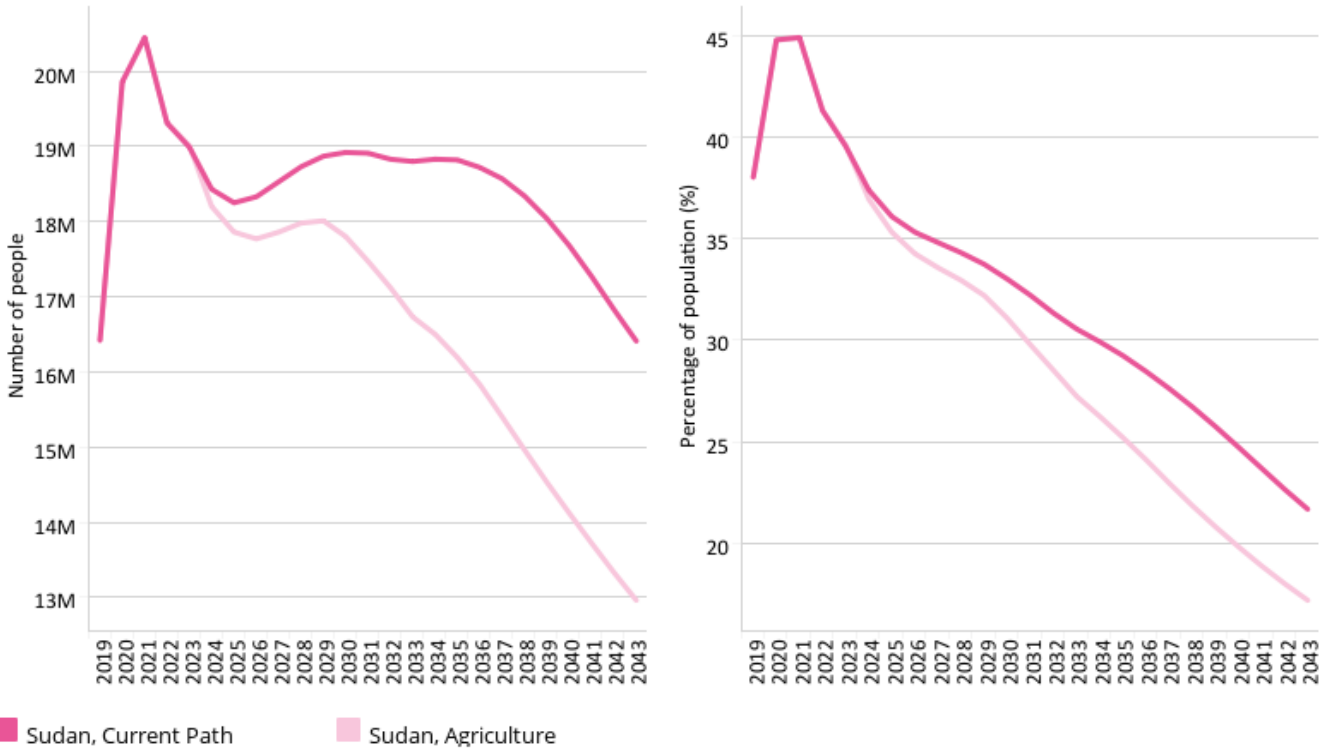
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The Agriculture scenario significantly impacts GDP per capita in Sudan. By 2043, the Agriculture scenario improves GDP per capita by US\$599 compared to the Current Path forecast, meaning the average Sudanese person will be earning US\$6 517 at that stage. This is, however, US\$2 727 above the projected average for low-income countries in Africa in 2043.

Chart 25: Poverty in CP and Agric scenario, 2019–2043
Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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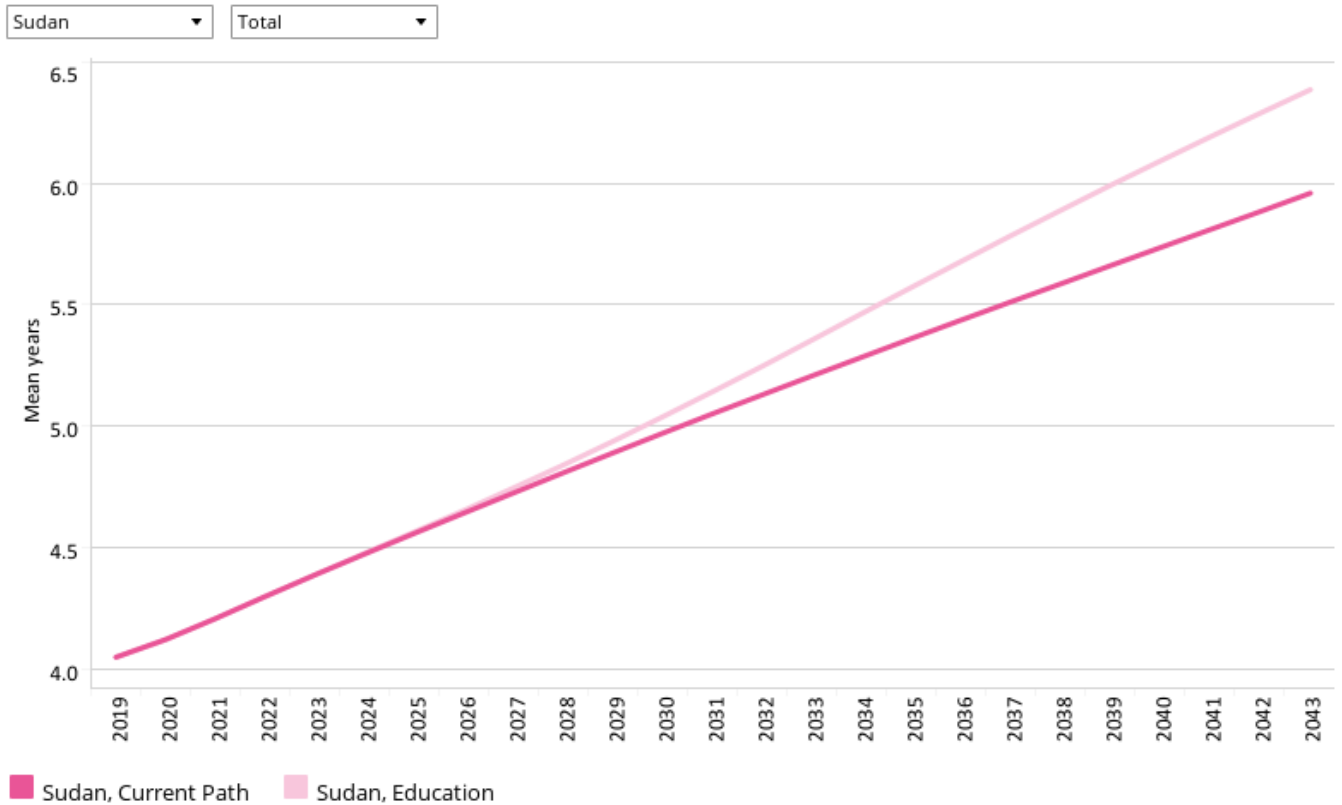
The agriculture sector is a crucial lifeline for millions of people in Sudan as the sector employs about 80% of the workforce.

Using the US\$1.90 per person per day extreme poverty threshold, the poverty rate in the Agriculture scenario by 2043 is 17.2%, compared to 21.7% in the Current Path forecast for the same year. This is equivalent to 3.45 million fewer people living in extreme poverty. Further development in the agriculture sector is a viable way of reducing poverty in Sudan. More investment in the sector will increase consumption and income, and even pave the way for agro-processing, positively affecting growth and poverty reduction.



Education scenario

Chart 26: Mean years of education in CP and Educ scenario, 2019–2043
Mean years of adult (+15) education



Source: IFs 7.63 initialising from Barro-Lee data

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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.

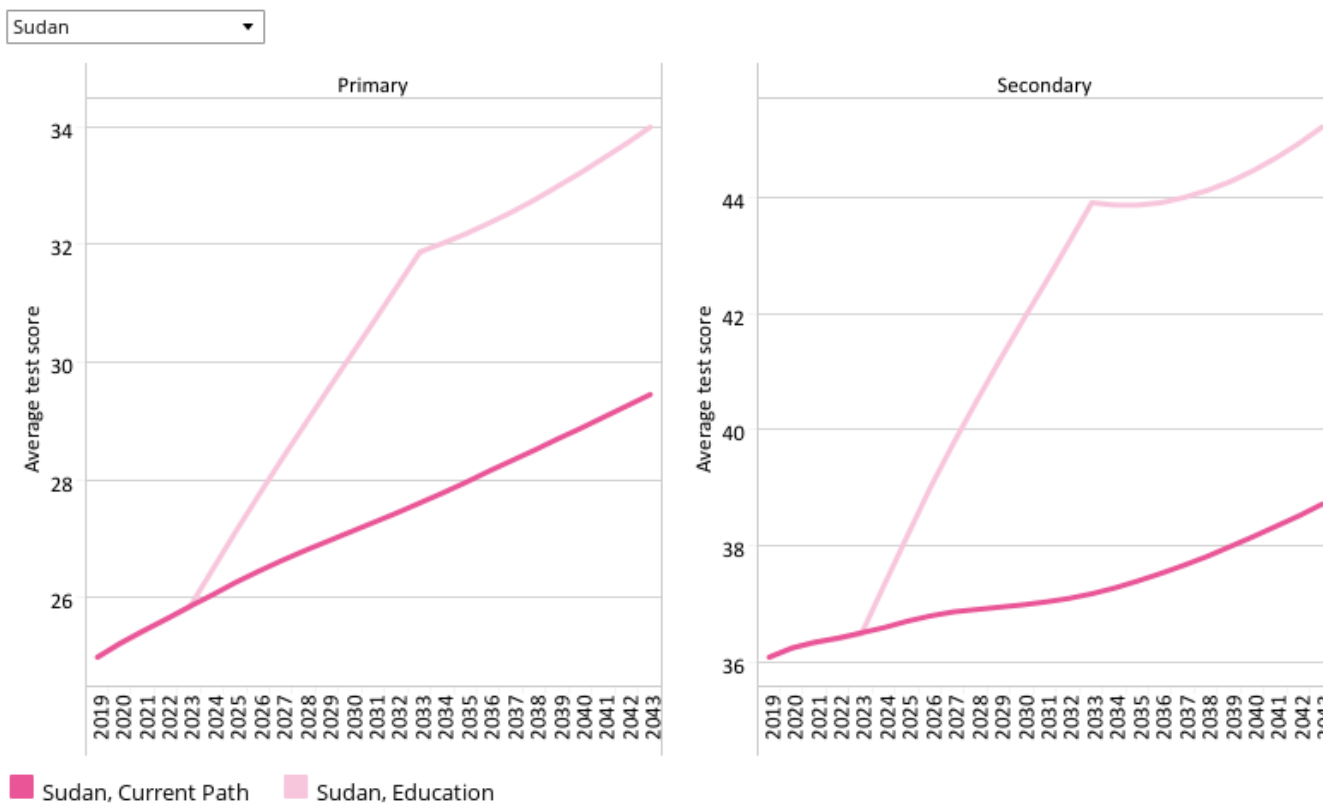
The intervention is explained [here](#) in the thematic part of the website.

Sudan has one of the largest numbers of out-of-school children in the Horn of Africa. It's estimated that over 3 million children, aged 5 to 13 years, are not in the classroom.[2] Conflict, a lack of awareness about the importance of education and chronic under-development all contribute to the poor schooling of boys and girls in Sudan. The inability to pay fees—even though school is free per government policy—prevents many poor families from sending children to school. Finally, cultural pressures and the traditional views of the role of women mean fewer girls attend and remain in school.

The average years of education in the adult population (aged 15 years and older) is a good indicator of the stock of education in a country. The average years of education for adults aged 15 years and older stood at 4 years in 2019, and on the Current Path, it is projected to improve to 6 years by 2043. Technically, this means that most people in Sudan will have primary education by 2043. In the Education scenario, the mean years of education improves by about five months above the Current Path forecast for 2043.

The situation facing girls at all ages is particularly alarming in Sudan. The mean years of education for males in 2019 was 4.4 compared to 3.8 for females. In the Education scenario, mean years of education for males and females converge at 6.4 years by 2043.

Chart 27: Education quality in CP and Educ scenario, 2019–2043
Average test scores for primary and secondary learners



Source: IFs 7.63 initialising from World Bank EDSTATS

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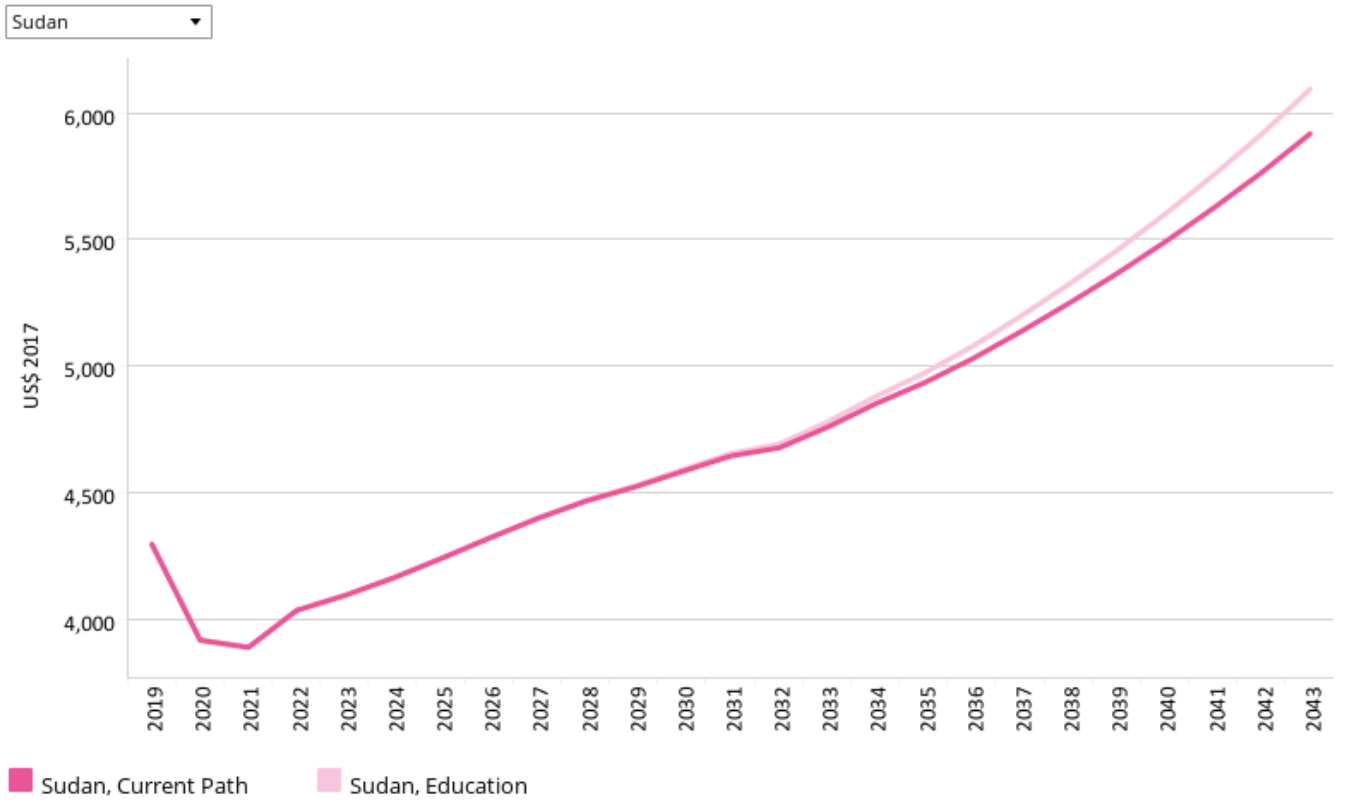
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Even if all the barriers to education are somehow overcome, once in the classroom the quality of learning is below the required standards. The Ministry of Education identified 3 692 unqualified teachers in South and East Darfur out of a total number of 7 315 employed teachers.[3] Many teachers in Sudan have been found to be untrained, under supervised and unequally distributed between rural and urban areas. In these schools, instruction consisted of rote learning, the school environments themselves were often unfriendly with inadequate separate sanitation facilities for girls, and teaching materials tended to be inappropriate, outdated or non-existent.[4]

In the Education scenario, the score for the quality of primary education improves from 25 in 2019 to 34 in 2043 — a 15.2% increase compared to the Current Path forecast of 29.5 in the same year. The score for the quality of secondary education increases from 36.1 in 2019 to 45.2 in 2043 in the scenario — a 16.8% improvement compared to the Current Path forecast of 38.7 in 2043.

Quality education is crucial for economic development. It allows the country to increase its current added value and create tomorrow's technological innovations. Thus, authorities in Sudan should accelerate reforms to improve the quality of education in the country.

Chart 28: GDP per capita in CP and Educ scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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By 2043, the Education scenario will increase GDP per capita by US\$175 above the US\$5 918 in the Current Path forecast — an increase of 3% above the Current Path forecast.

Investment in education significantly impacts economic growth, but it takes time to materialise. For instance, it will take more than a decade for a child enrolled in primary school to contribute meaningfully to the economy.

Chart 29: Poverty in CP and Educ scenario, 2019–2043
Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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Education is one of the most important tools for reducing poverty: it improves the employment and income prospects of the poor segment of society. By 2043, Sudan will record a poverty rate of 20.3% (15.3 million people) in the Education scenario, compared to 21.7% (16.4 million people) in the Current Path forecast. This means 1.1 million fewer people will live in extreme poverty than in the Current Path forecast for 2043.



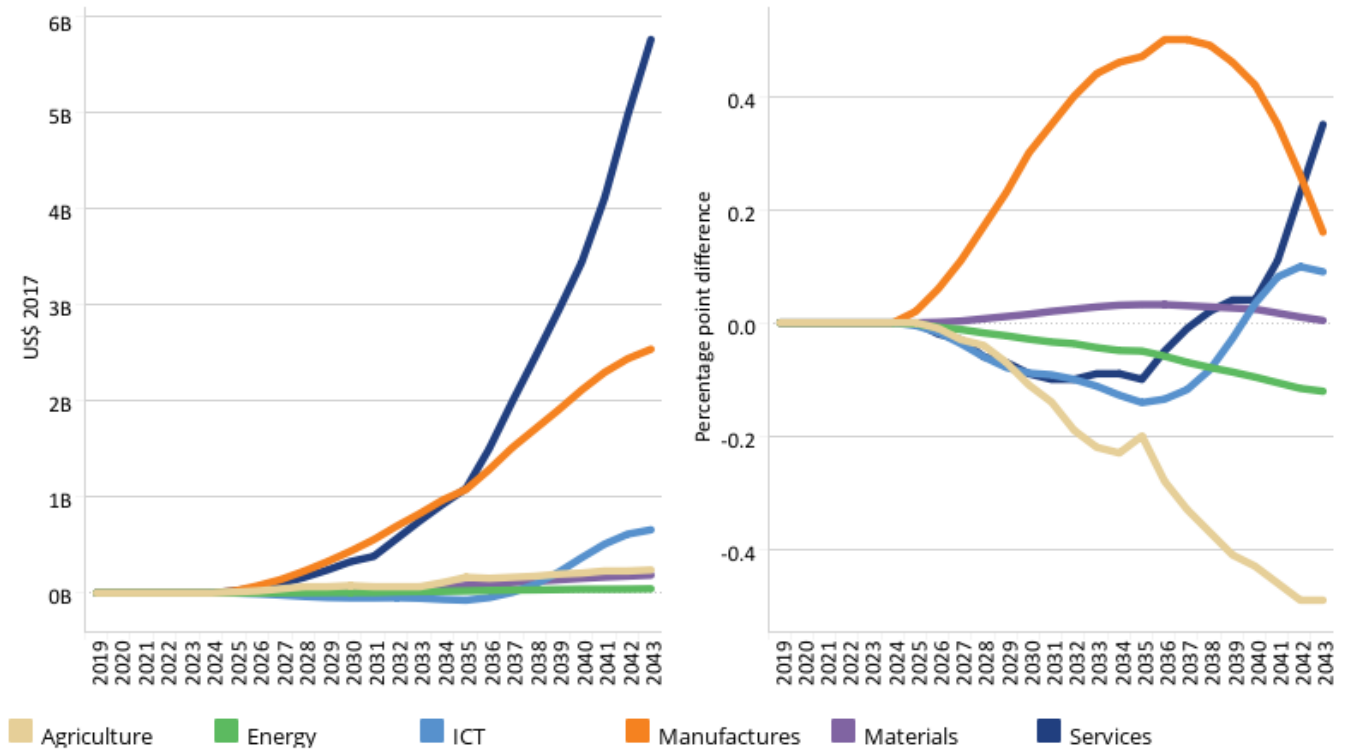
Manufacturing scenario

Chart 30: Value added by sector in CP and Manufac/Transfers scenario, 2019-2043



Absolute and % point difference GDP

Sudan



Source: IFs 7.63 initialising from International Monetary Fund World Economic Outlook database

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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.

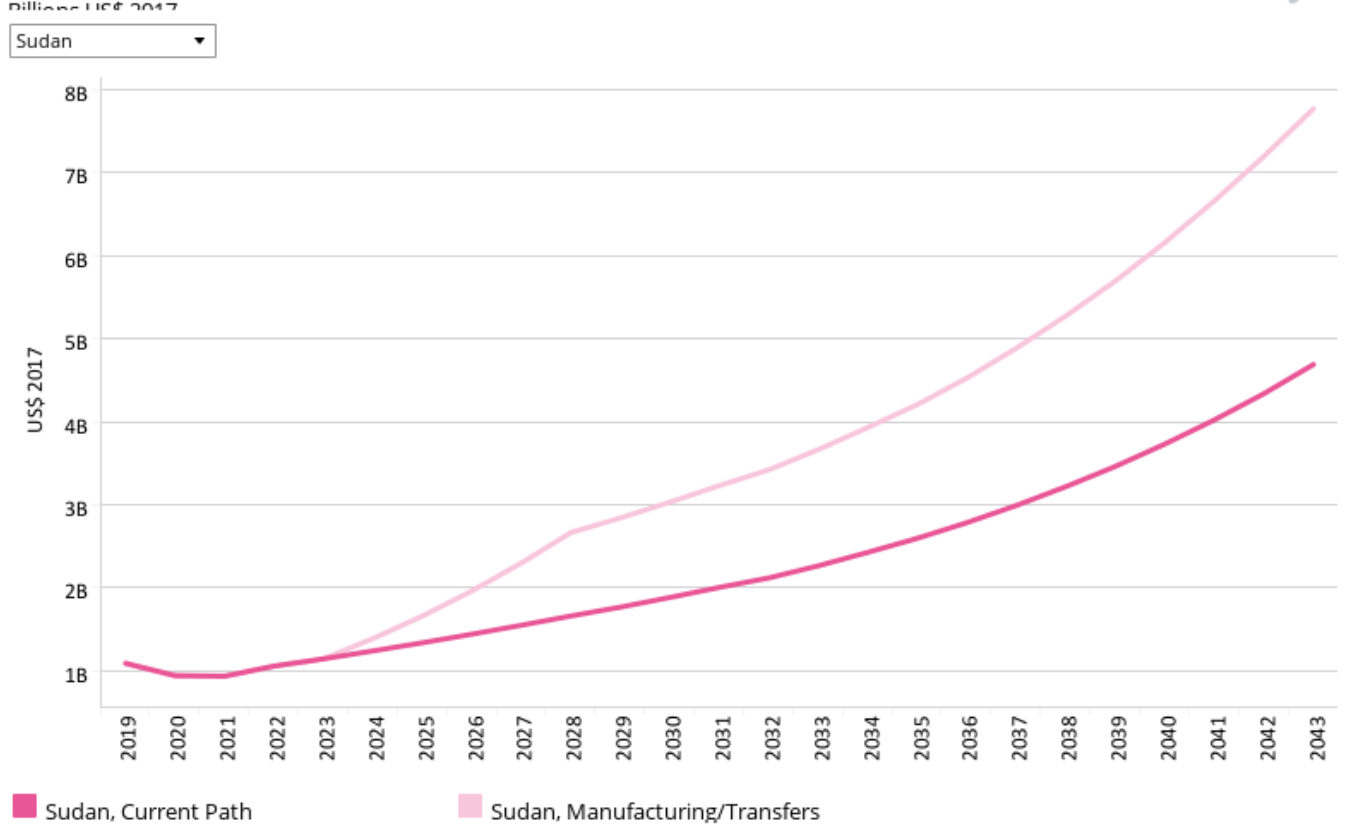
Chart 30 should be read with [Chart 8](#) that presents a stacked area graph on the contribution to GDP and size, in billion US\$, of the Current Path economy for each of the sectors.

In absolute terms, the contribution of the service sector to GDP has the most significant improvement compared to the Current Path forecast in 2043. It is forecast to be US\$5.8 billion larger than in the Current Path forecast. The service sector is followed by the manufacturing sector, with its contribution of US\$2.5 billion above the Current Path in 2043.

As a percentage of GDP, the share of the service sector in GDP is 0.35 percentage point larger in the scenario than in the Current Path forecast in 2043. The manufacturing sector follows with 0.16 percentage points above the Current Path forecast. The share of the agriculture sector declines by 0.5 percentage points compared to the Current Path forecast,

indicating the structural transformation of the economy.

Chart 31: Gov welfare transfers in CP and Manufac/Transfers scenario, 2019-2043



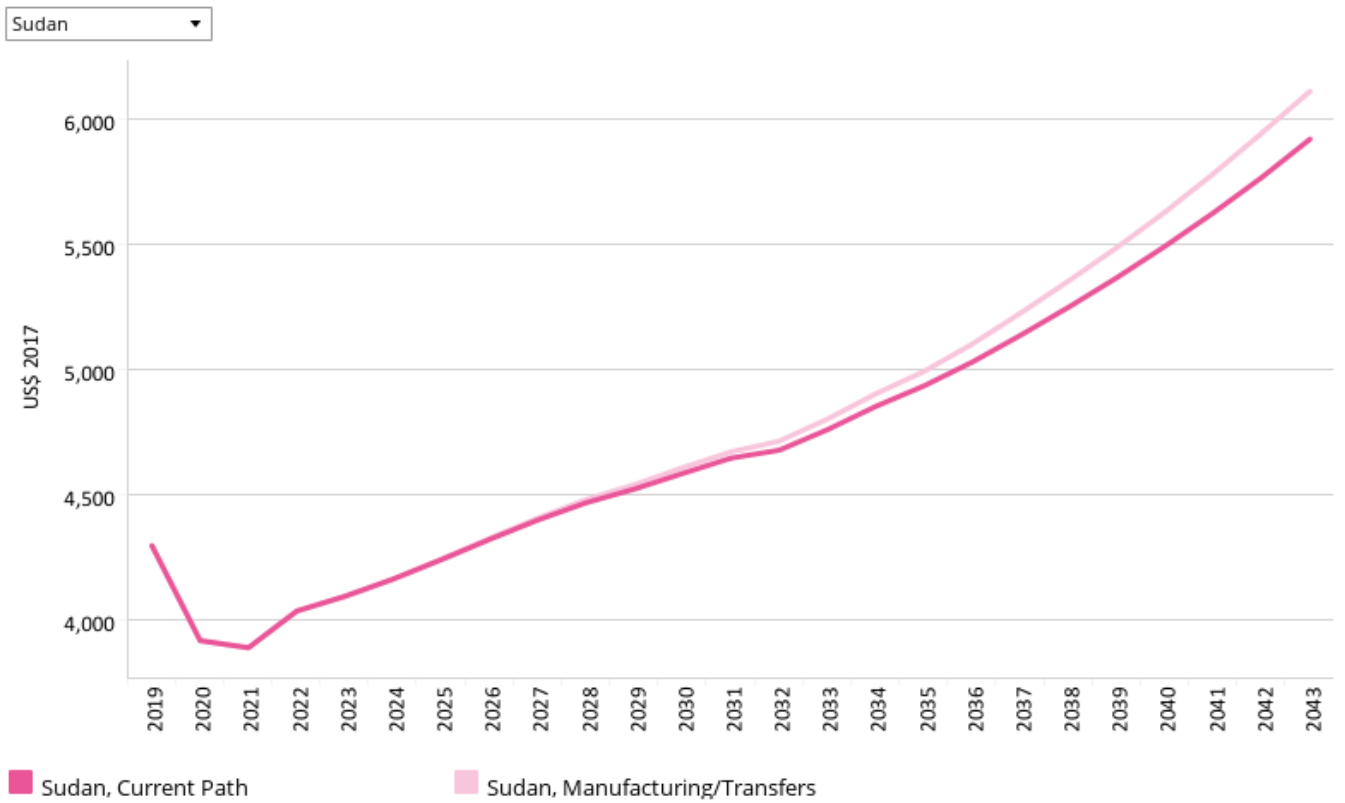
Source: IFs 7.63 initialising from World Development Indicators data

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Compared to the Current Path forecast, the Manufacturing/Transfers scenario increases household transfers and welfare by 65.9% in 2043. This represents US\$3.1 billion more than the Current Path forecast of US\$4.7 billion. These transfers will be needed to address the initial increase in poverty associated with the investment in the manufacturing sector.

Industrialisation is often funded by an initial crunch in consumption, increasing poverty in the first few years. However, these efforts stimulate inclusive growth with a greater impact on poverty alleviation in the long term. To make the social safety net programmes more effective at reducing poverty, better targeting and efficient approaches are critical.

Chart 32: GDP per capita in CP and Manufac/Transfers scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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Manufacturing is important for economic growth due to its backward and forward linkages with other sectors and its ability to transform the productivity structures across an economy. Thus, a robust manufacturing sector is crucial for sustained growth and significantly improves the population's living standard.

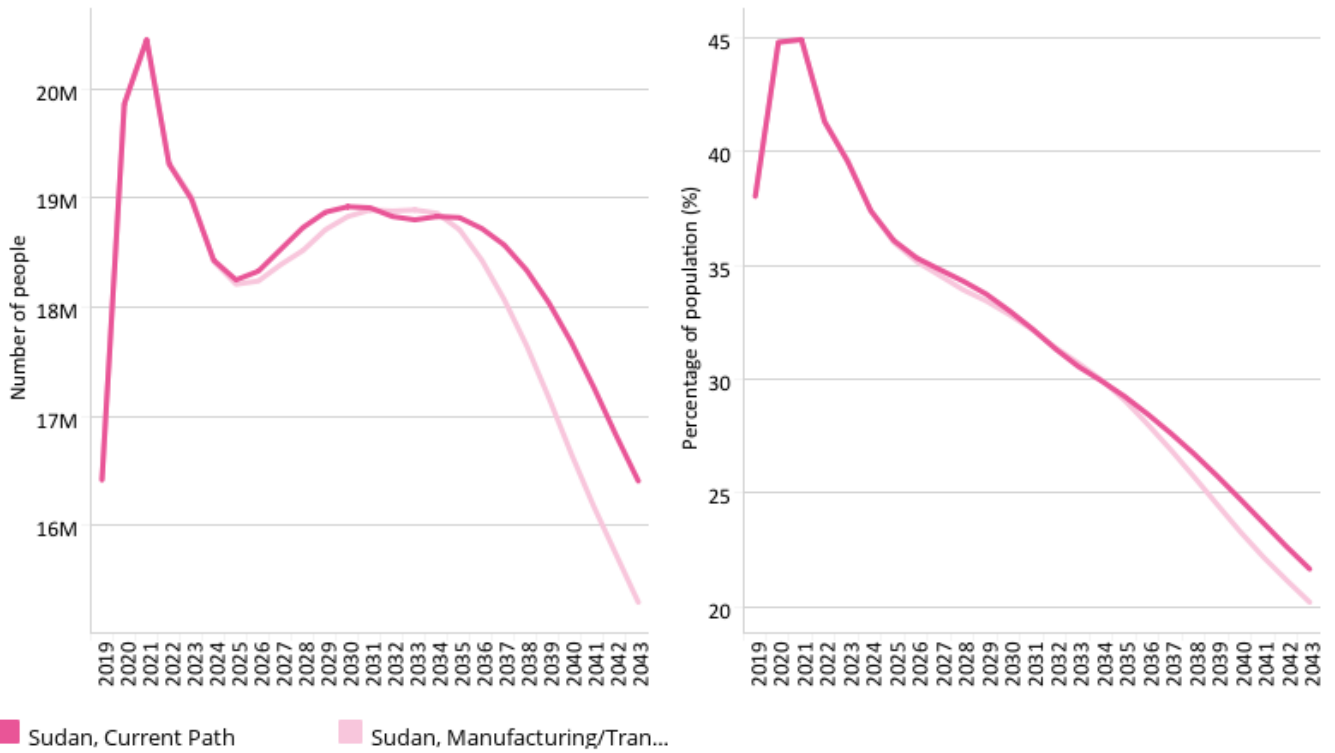
In the Manufacturing/Transfers scenario, GDP per capita is US\$190 higher than the US\$5 918 in the Current Path forecast by 2043 — an increase of 3.2%.

Chart 33: Poverty in CP and Manufac/Transfers scenario, 2019–2043

Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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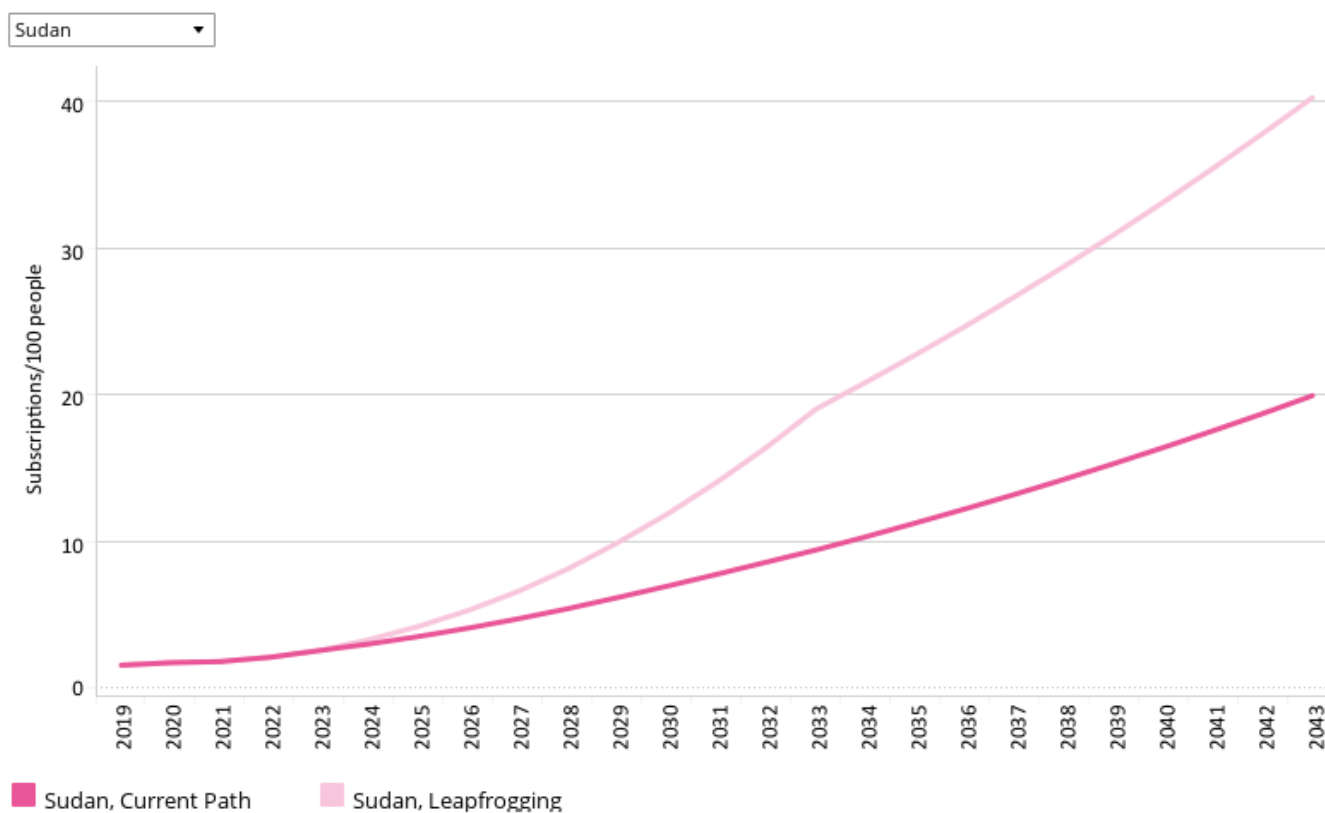
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At the poverty threshold of US\$1.90, 16.4 million people in Sudan (38% of the population) were considered to be extremely poor in 2019. The number of poor people by 2043 will stand at 15.3 million (20.2% of the population) in the Manufacturing/Transfers scenario compared to 16.4 million (21.7% of the population) in the Current Path forecast for that year — a difference of 1.1 million people. The poverty rate in the Manufacturing/Transfers scenario in 2043 is 5 percentage points below the average in the Current Path forecast for Africa low-income countries.



Leapfrogging scenario

Chart 34: Fixed broadband access in CP and Leapfrogging scenario, 2019–2043
Subscriptions per 100 people



Source: IFS 7.63 initialising from International Telecommunication Union data

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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.

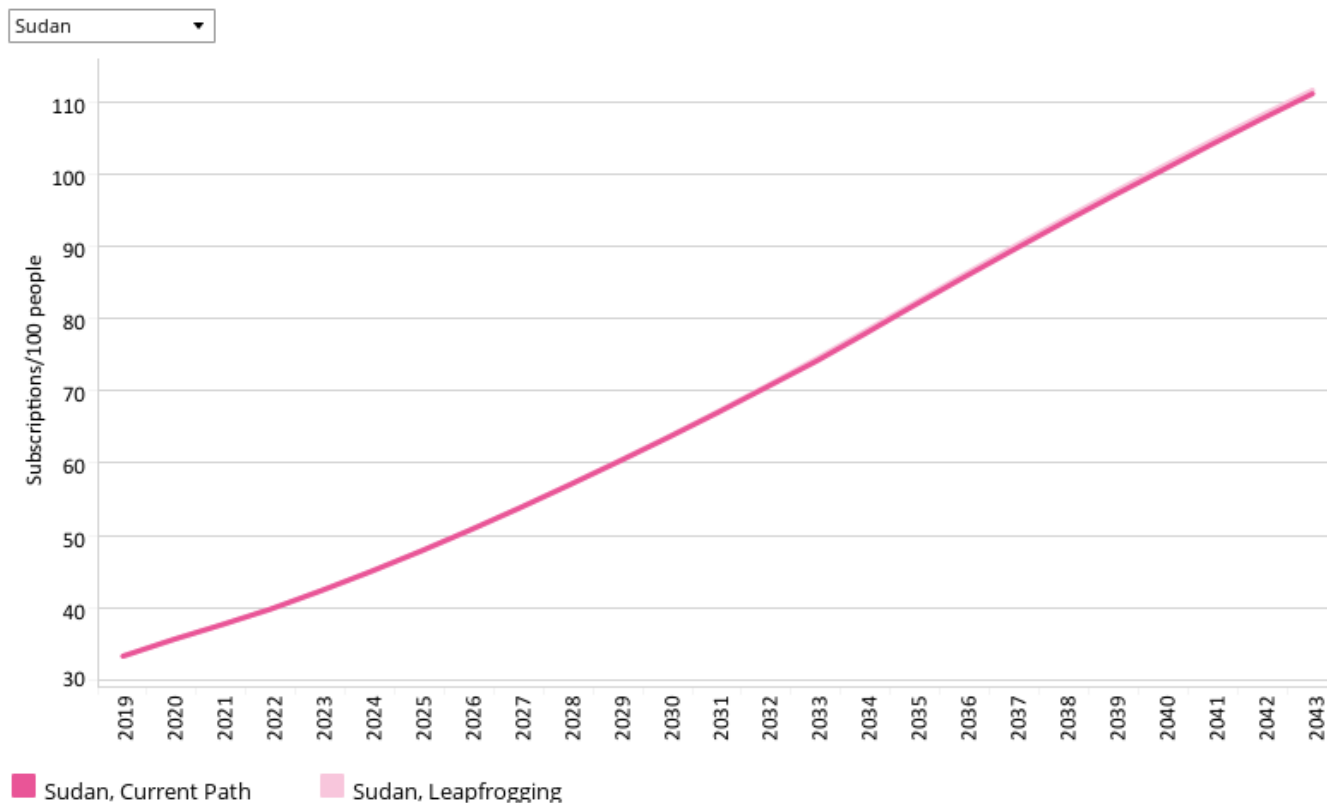
Fixed broadband includes cable modem Internet connections, DSL Internet connections of at least 256 KB/s, fibre and other fixed broadband technology connections (such as satellite broadband Internet, ethernet local area networks, fixed-wireless access, wireless local area networks, WiMAX, etc.).

Widespread access to high-speed Internet has the potential to improve a country's socio-economic outcomes. Broadband can increase productivity, reduce transaction costs and optimise supply chains, positively affecting economic growth.

Sudan has one of the most liberalised ICT sectors in Africa. Recent connection to an undersea fibre optic cable has led to access extensions, efficiency upgrades and reduced telecommunications costs. In Sudan, 31% of the population are Internet users, placing the country at a far higher pace relative to all the Horn of Africa nations (except Djibouti).[5]

Fixed broadband subscriptions stood at 1.6 per 100 people in 2019 compared to the average of 2.3 for low-income countries in Africa. In the Leapfrogging scenario, fixed broadband subscriptions increase to 40.3 per 100 people by 2043, more than double the Current Path forecast of 19.9 subscriptions per 100 people for the same year.

Chart 35: Mobile broadband access in CP and Leapfrogging scenario, 2019–2043
Subscriptions per 100 people



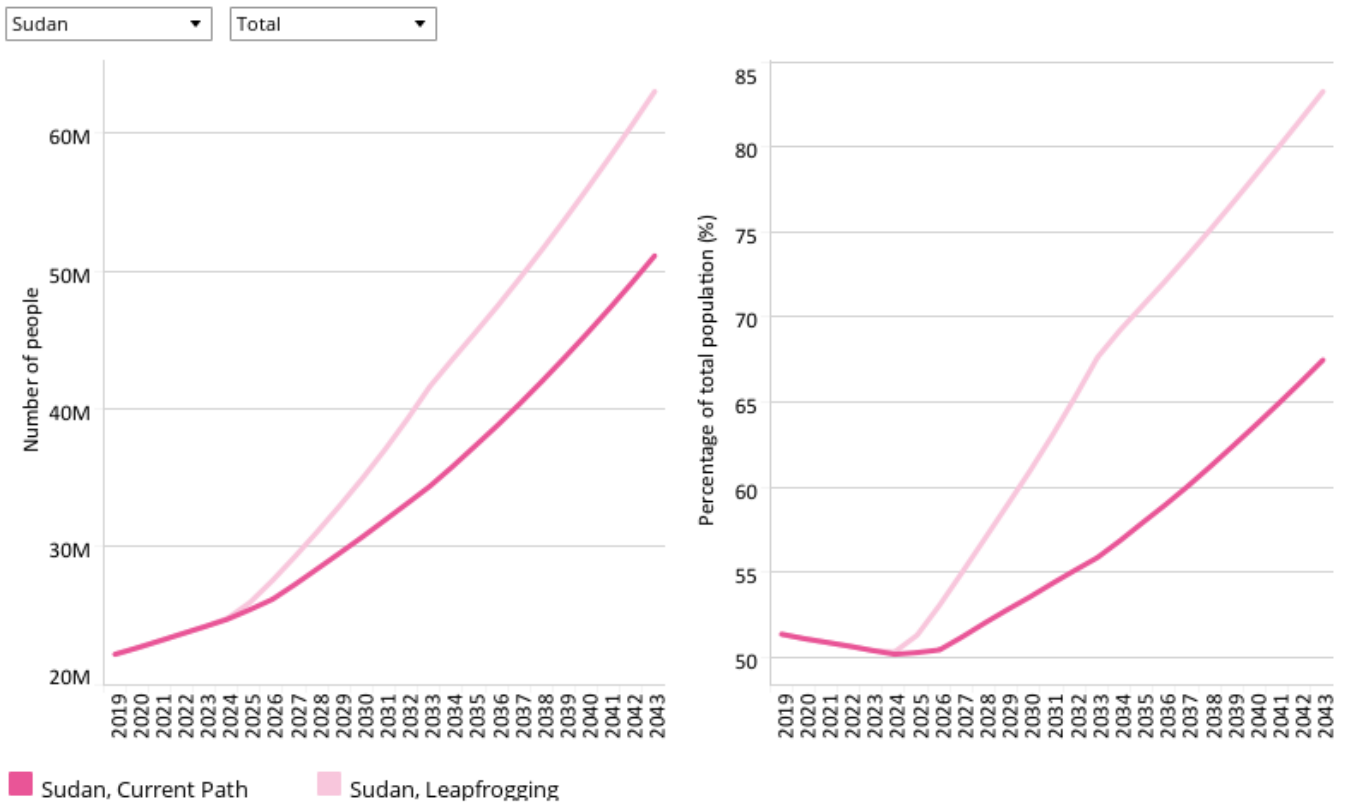
Source: IFs 7.63 initialising from International Telecommunication Union data

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

Mobile broadband subscriptions stood at 33.25 per 100 people in Sudan in 2019, above the average of 22.9 for low-income Africa. In the Leapfrogging scenario, mobile broadband subscriptions per 100 people in Sudan increase to 111.7 by 2043, slightly above the Current Path forecast of 111.2.

Chart 36: Electricity access in CP and Leapfrogging scenario, 2019–2043
Millions of people and % of population



Source: IFs 7.63 initialising from World Development Indicators data

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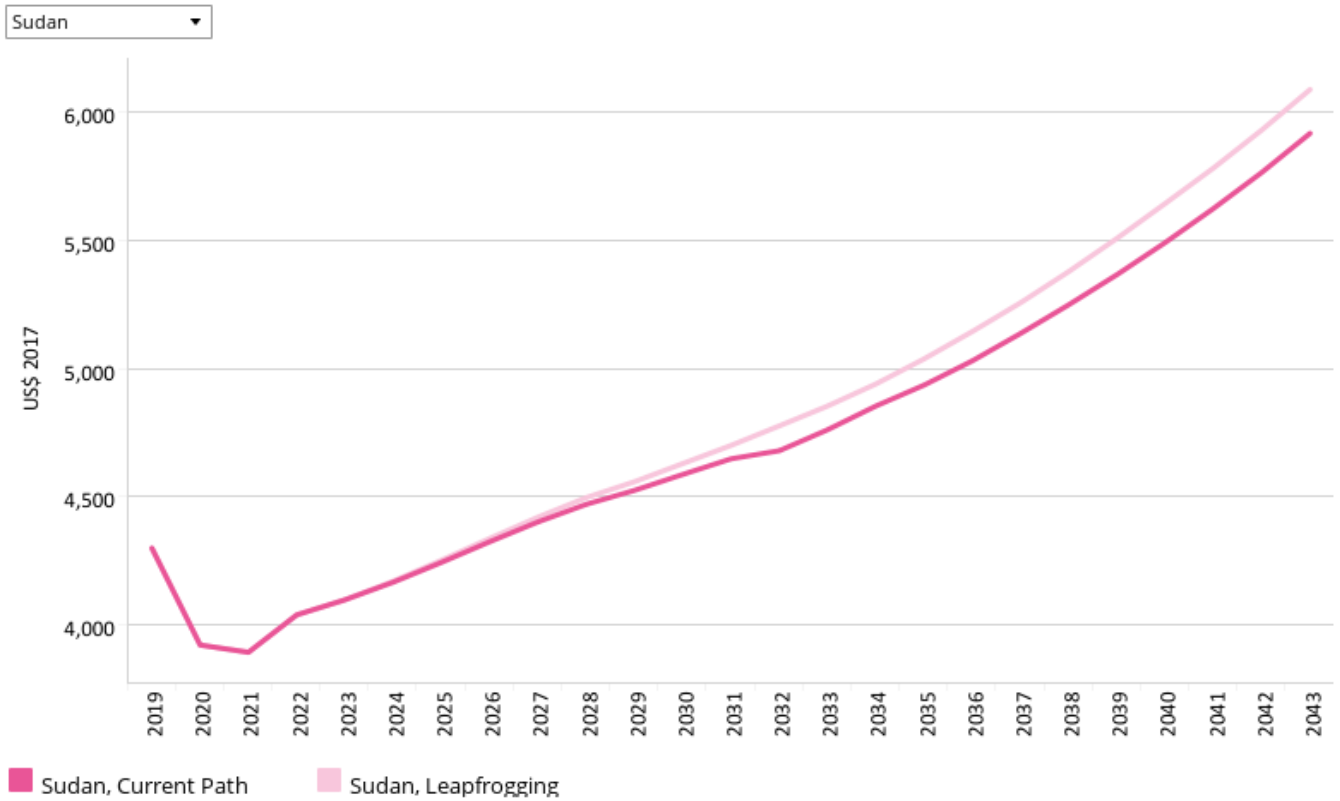
The Government of Sudan has invested extensively in the production and distribution of thermal and hydroelectric power over the past decade. Power generation capacity has doubled, rising from around 8 455 MW in 2011 to 17 064 MW in 2018.[6] (Sudan also imports electricity from Ethiopia.) Despite this growth, the power demand exceeds the available supply regularly, resulting in frequent power outages. In 2019, 51.3% of the population (22.2 million people) had access to electricity. This is above the average of 32.2% for low-income countries in Africa.

Also, access to electricity is skewed towards the urban areas. In 2019, about 71.4% of the urban population had access to electricity, compared to 41% in rural areas.

In the Leapfrogging scenario, 83.3% of the people in Sudan (63 million people) will have access to electricity by 2043. This is far above the projected average of 60.5% in the Current Path forecast for Africa low-income countries in the same year.

By 2043, 87.6% of the urban population will have access to electricity in the Leapfrogging scenario compared to 82.1% in the Current Path forecast. Regarding the population in the rural areas, 80.6% of them will have access to electricity by 2043 in the Leapfrogging scenario compared to only 58.6% in the Current Path forecast for the same year.

Chart 37: GDP per capita in CP and Leapfrogging scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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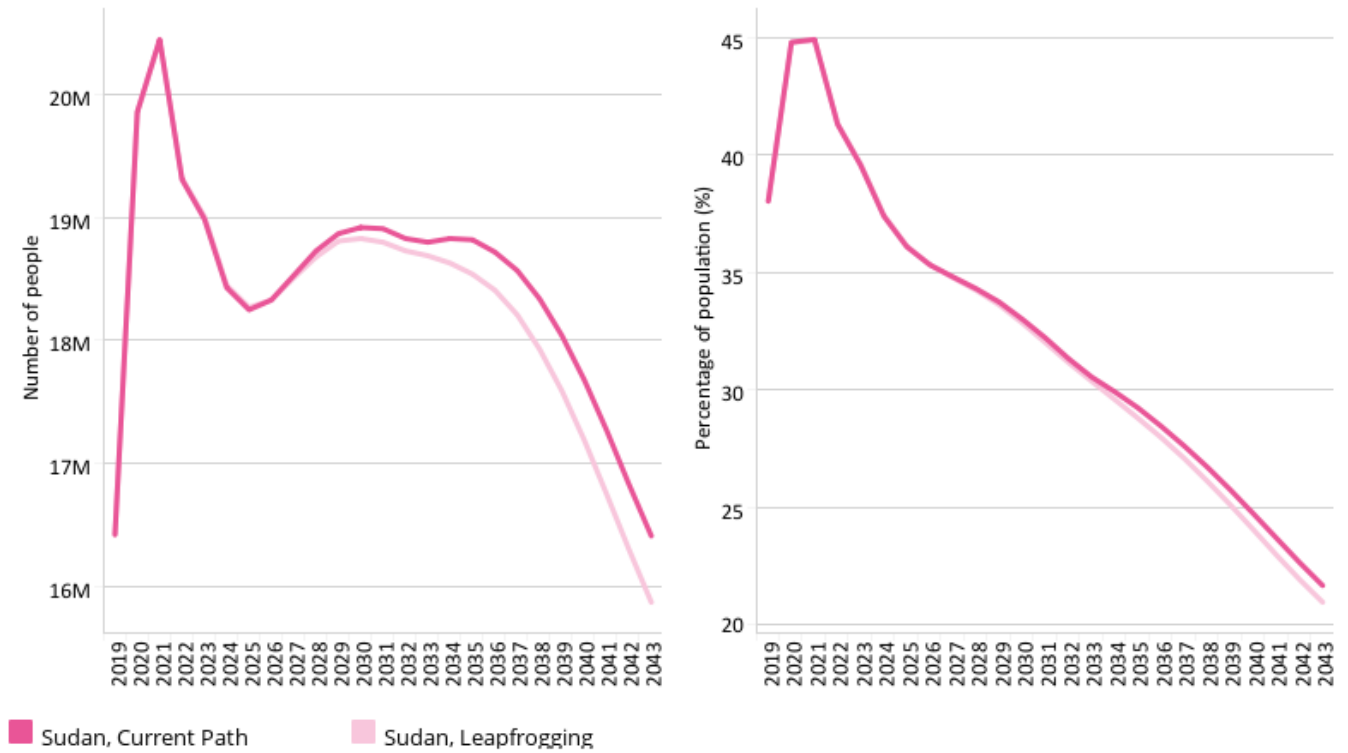
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By 2033, GDP per capita in the Leapfrogging scenario will be at US\$4 853, compared to US\$4 760 in the Current Path forecast, a difference of US\$93. In 2043, this difference will grow to US\$171. The GDP per capita in the Leapfrogging scenario is US\$2 303 lower than the projected average for low-income countries in Africa in 2043.

Chart 38: Poverty in CP and Leapfrogging scenario, 2019–2043
 Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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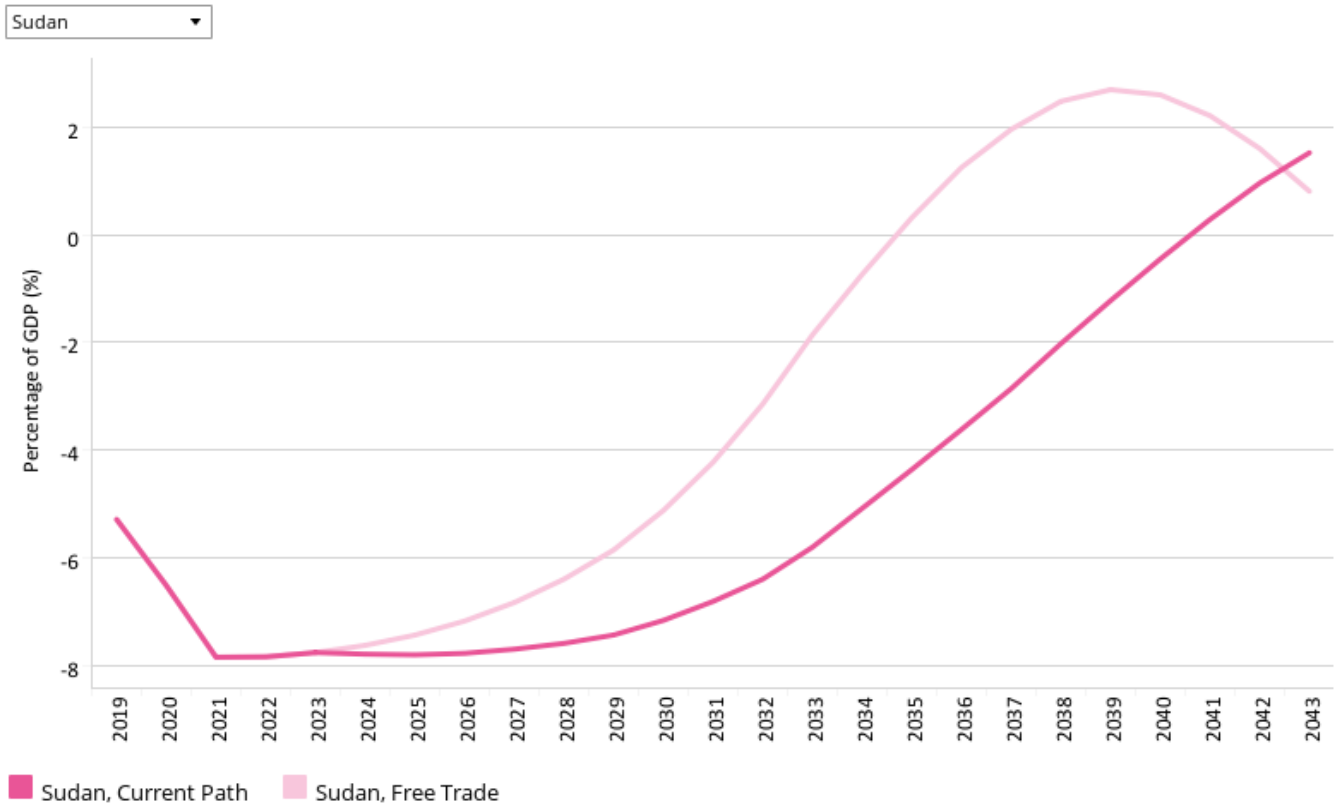
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In the Leapfrogging scenario, the number of poor people in 2043 is 15.87 million (21% of the population). This is roughly 540 000 fewer poor people than in the Current Path forecast for the same year. In the Leapfrogging scenario, the poverty rate is four percentage points higher than the average for Africa's low-income countries.



Free Trade scenario

Chart 39: Trade balance in CP and Free Trade scenario, 2019–2043
% of GDP



Source: IFs 7.63 initialising from World Development Indicators data

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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.

The loss of oil reserves following South Sudan's secession eventually forced the Government of Sudan to boost non-oil exports to compensate for the loss of oil export revenue. As a result, exports in agriculture raw materials increased from 9% of total exports in 2011 to 57% in 2018.[7] Despite this improvement, government policies did not materialise in diversifying exports from agriculture, raw materials and natural resources to manufactured goods. Sudan mainly exports fuels, gold, oilseed, live animals and cotton, and imports capital goods and foodstuffs.

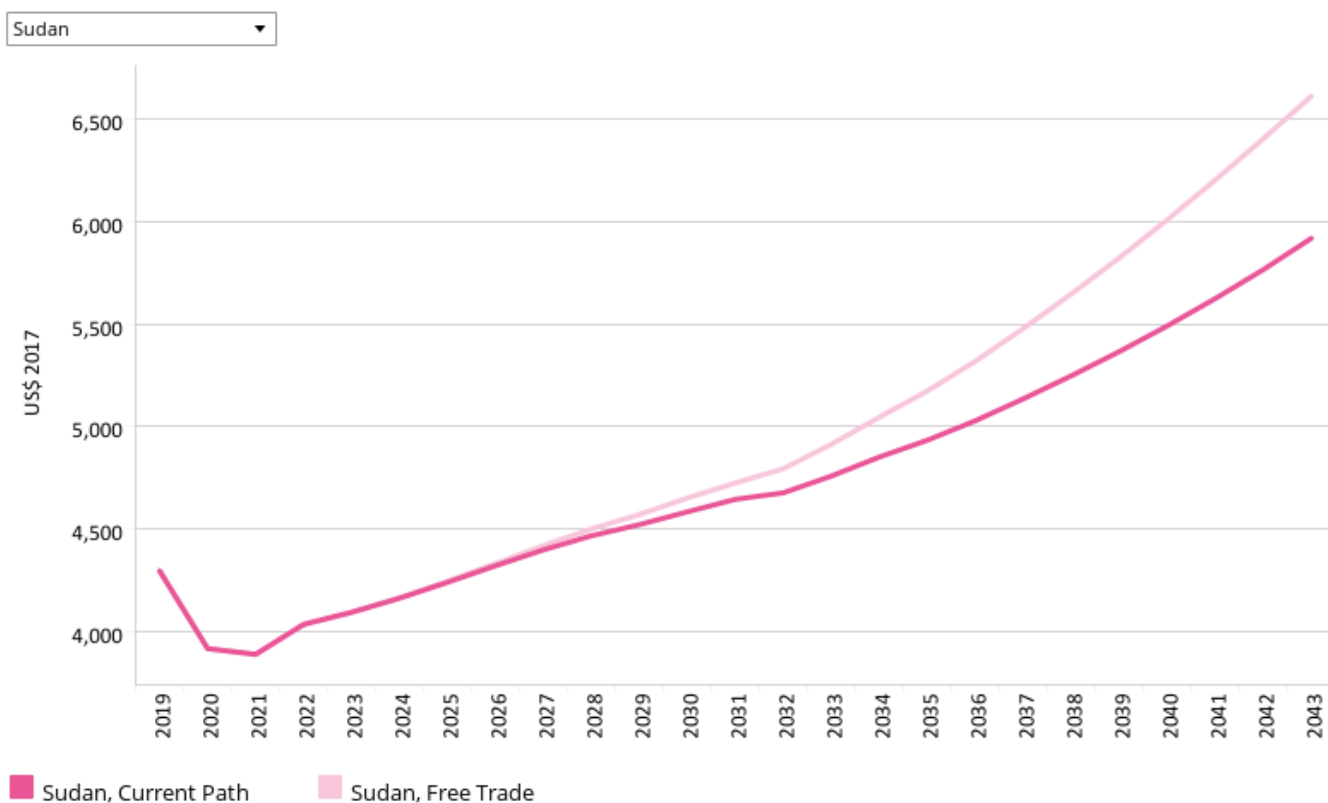
In 2019, the country's trade deficit amounted to nearly 5.3% of GDP. In the Free Trade scenario, Sudan's trade balance does improve: the country is forecast to record a trade surplus amounting to 0.32% of GDP by 2035, and 2.7% by 2038 before declining slowly to a surplus equivalent to 0.8% of GDP by 2043. In sum, over the period 2024 to 2042, Sudan's

trade balance in the Free Trade scenario is better than in the Current Path forecast. However, in 2043, the trade surplus forecast on the Current Path (1.5% of GDP) is larger than in the Free Trade scenario (0.8% of GDP).

With the removal of trade restrictions, following the full implementation of the AfCFTA, it becomes easier to import while the weak manufacturing sector of Sudan faces intense competition in the export markets, which reduces the trade surplus.

However, only using the trade balance is not a viable indicator to conclude that Sudan will be a loser after the full implementation of the AfCFTA as other indicators need to be considered.

Chart 40: GDP per capita in CP and Free Trade scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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Generally, trade liberalisation improves productivity through competition and technology diffusion, stimulating growth and raising income levels. In the Current Path forecast, GDP per capita increases from US\$4 298 in 2019 to US\$5 918 in 2043 but would be US\$6 610 in the Free Trade scenario — an increase of US\$692 more than the Current Path forecast for that year. This shows that the full implementation of the AfCFTA will enhance economic growth in Sudan.

Chart 41: Poverty in CP and Free Trade scenario, 2019–2043
Millions of people and % of total population



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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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.

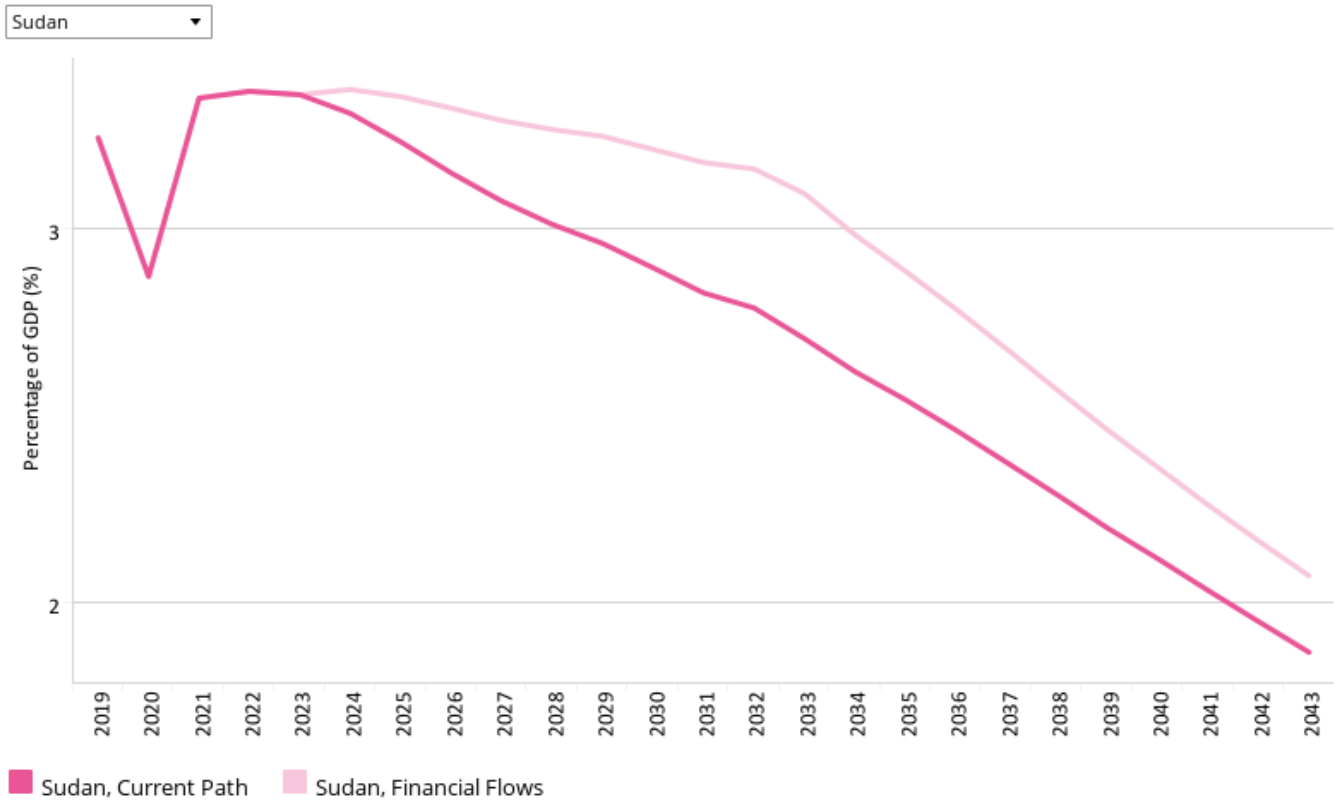
Between 2024 and 2033, the poverty rate at US\$1.90 in the Free Trade scenario is above the Current Path forecast. However, over the period 2034 to 2043, the poverty rate in the Free Trade scenario is below the Current Path forecast. The initial increase in poverty rates arises from the redistributive effect of trade openness associated with the implementation of the AfCFTA, and as firms and households adjust in the long term, poverty rates decline. The implementation of the AfCFTA will lead to creative destruction where the inefficient firms are kicked out of the markets (i.e. collapse) under intense competition. This will lead to job losses and poverty unless the government responds with a safety net programme. But in the long term, as the efficient firms grow with the trade opportunities, job opportunities increase, the unemployment rate declines and so does the poverty rate.

By 2043, the poverty rate in the Free Trade scenario is forecast to be 18.3% compared to 21.7% in the Current Path forecast. This is equivalent to 2.5 million fewer poor people than on the Current Path.



Financial Flows scenario

Chart 42: Foreign aid in CP and Financial Flows scenario, 2019–2043
% of GDP



Source: IFs 7.63 initialising from Development Assistance Committee of the OECD data, and World Bank and OECD GNI estimates.

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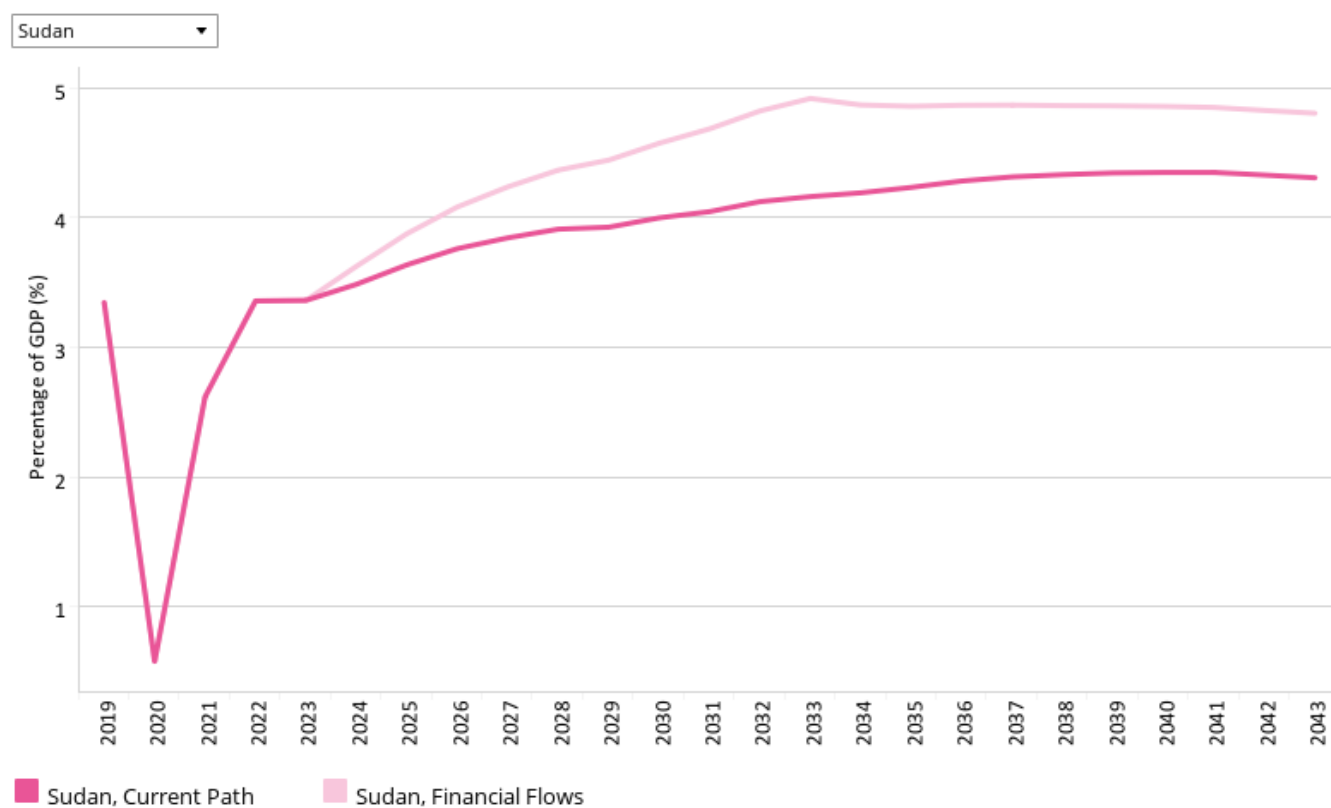
The Financial Flows scenario represents a reasonable but ambitious increase in worker remittances and aid flows to poor countries, and an increase in the stock of foreign direct investment (FDI) and additional portfolio investment inflows to middle-income countries. We also reduced outward financial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

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

Many countries in sub-Saharan Africa are still heavily reliant on foreign aid to provide basic services like education and health. This is the case for Sudan. Like most states in the Horn of Africa, Sudan relies heavily on aid from the Gulf countries. However, the removal of Sudan from the US State Sponsors of Terrorism list opens the door for additional aid.

Aid represented 3.2% of Sudan's GDP in 2019, which was below the average of 8.5% of GDP for low-income Africa. In the Financial Flows scenario, foreign aid flows to Sudan will account for 2.1% of GDP by 2043, above the Current Path forecast of 1.87% and below the average of 3.8% for low-income countries in Africa.

Chart 43: Inflow of FDI in CP and Financial Flows scenario, 2019–2043
% of GDP



Source: IFs 7.63 initialising from International Monetary Fund World Economic Outlook database

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The poor business climate, recurrent political instability and conflicts deter foreign investment inflows into Sudan. In the 2020 Doing Business report by the World Bank, Sudan ranked 171 out of 190 countries.[8]

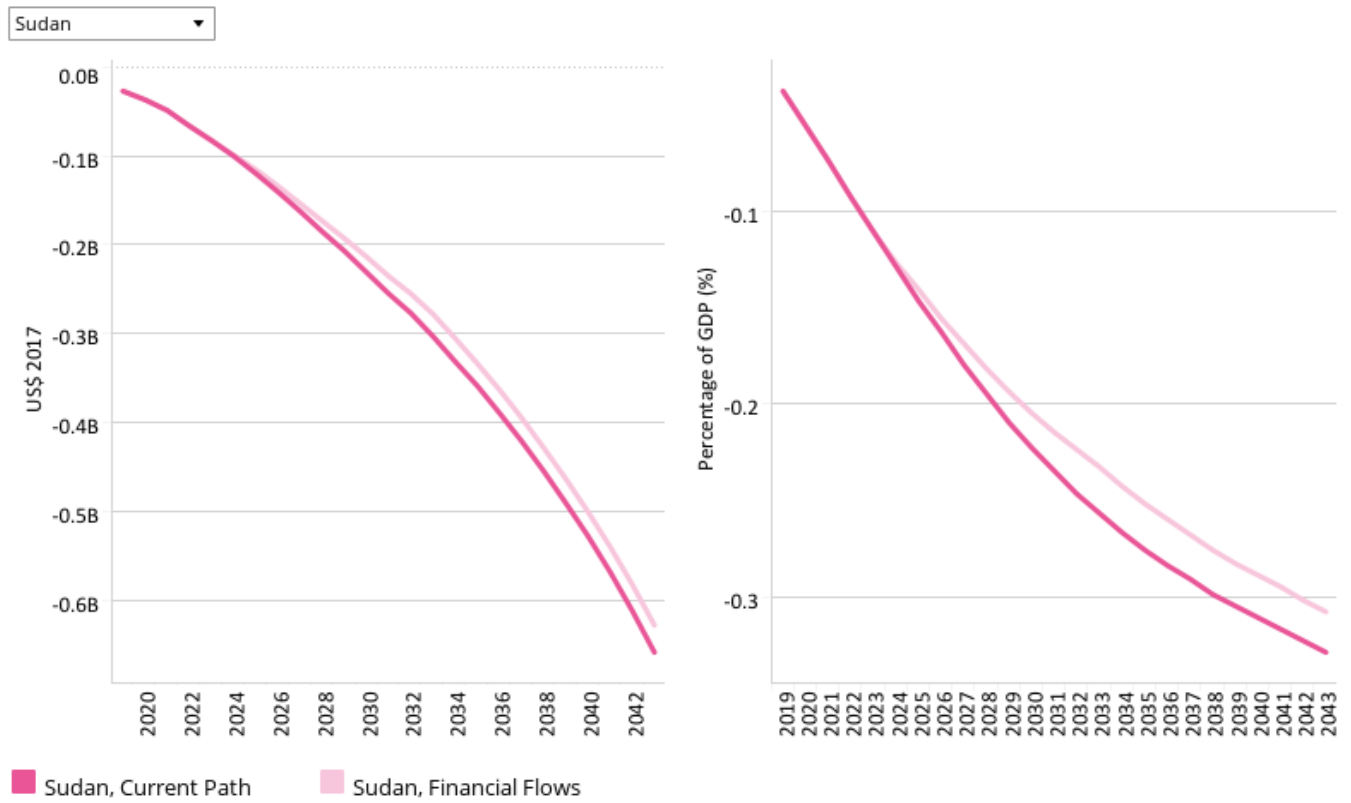
Like most countries in the Horn of Africa, Sudan relies heavily on investment from the Gulf countries. Ethiopia and Sudan are the main destinations of Arab countries' investments in the Horn of Africa. For instance, these two countries accounted for about 95% of total investment by the Gulf states (Saudi Arabia, the UAE, Kuwait and Qatar) in the Horn between 2000 and 2017.[9]

In 2019, FDI inflows represented 3.3% of the country's GDP before declining to 0.58% in 2020 due to the multiple shocks associated with the COVID-19 pandemic. In the Financial Flows scenario, FDI inflows in 2043 will represent about 4.8% of GDP compared to 4.31% on the Current Path.

FDI can act as a catalyst for economic growth and development as it brings much-needed capital and technology to recipient countries. The authorities in Sudan should improve stability and make the necessary reforms to attract more FDI, especially manufacturing FDI.

Chart 44: Remittances in CP and Financial Flows scenario, 2019–2043

Billions US\$ 2017 and % of GDP



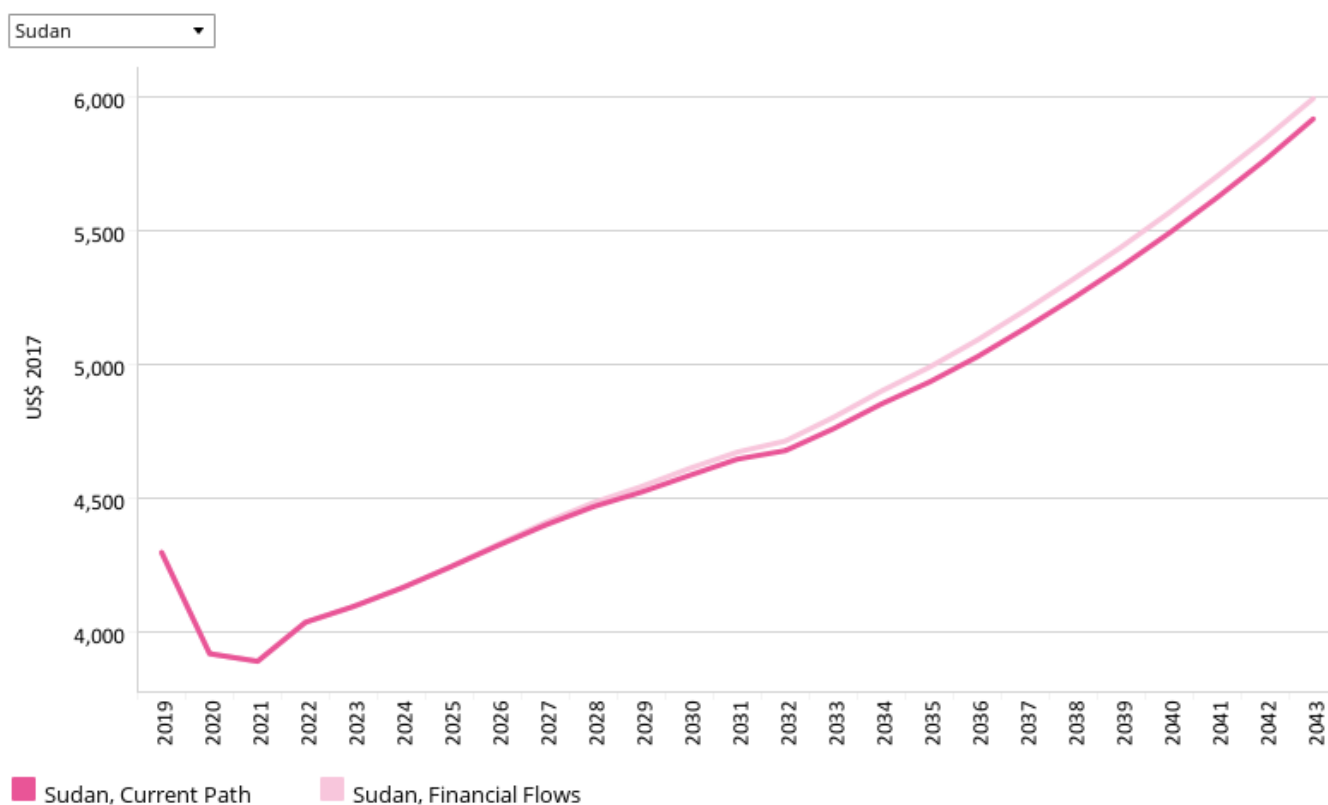
Source: IFs 7.63 initialising from World Development Indicators data

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Sudan is a net sender of remittances according to estimates in IFs. In 2019, remittances sent amounted to 0.04% of GDP. On the Current Path, by 2043, the country will send about seven times as much money abroad: US\$0.7 billion, representing 0.33% of GDP. In the Financial Flows scenario, however, Sudan would be sending US\$0.6 billion abroad, accounting for 0.31% of GDP.

Chart 45: GDP per capita in CP and Financial Flows scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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In the Financial Flows scenario, the GDP per capita of Sudan increases from US\$4 298 in 2019 to US\$5 994 in 2043, which is US\$76 higher than in the Current Path forecast for the same year. Overall, the Financial Flows scenario has a modest impact on GDP per capita in Sudan. FDI, for instance, can boost growth and development but it is not straightforward. Studies have shown that the impact of FDI on economic growth is conditional on the recipient countries' absorptive capacities (domestic conditions) such as the level of human capital, infrastructure development, financial development and institutional development, among others.[10] Sudanese authorities should not only implement policies to attract FDI but they should also improve the domestic conditions to harness the growth enhancing effect of FDI, and other external financial flows.

Chart 46: Poverty in CP and Financial Flows scenario, 2019–2043
Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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The Financial Flows scenario reduces the number of extremely poor people in Sudan by only 310 000 by 2043, compared to the Current Path forecast, using the US\$1.90 poverty threshold. One of the plausible explanations of this minor impact of external financial flows on poverty is that FDI to Sudan is generally concentrated in the extractive industry, which does not have strong forward and backward linkages with other sectors of the economy. As a result, it does not substantially impact job creation and employment. Whereas 38% of Sudan's population lived in extreme poverty in 2019, by 2043, it would be 21.3% in the Financial Flows scenario, compared to 21.7% in the Current Path forecast.



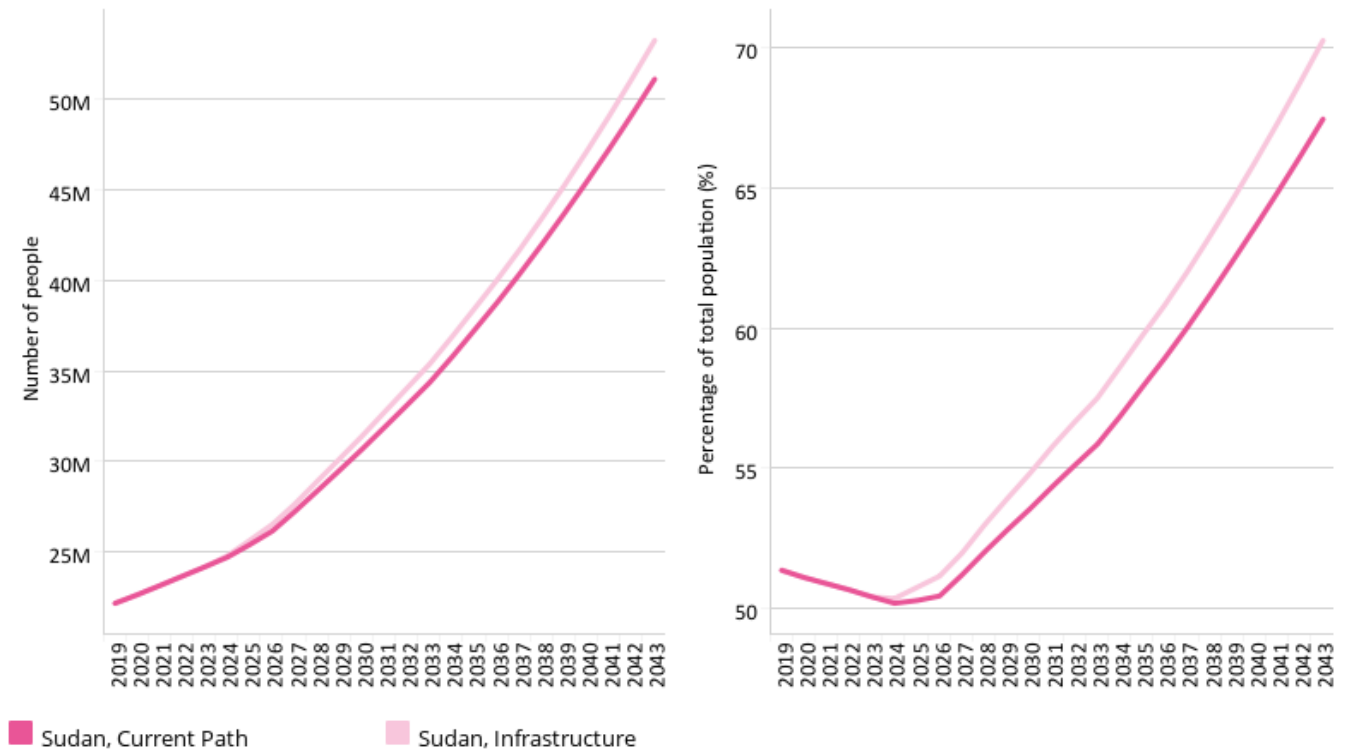
Infrastructure scenario

Chart 47: Electricity access in CP and Infrastructure scenario, 2019–2043

Millions of people and % of population



Sudan Total



Source: IFs 7.63 initialising from World Development Indicators data

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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 those supporting health, sanitation and ICT.

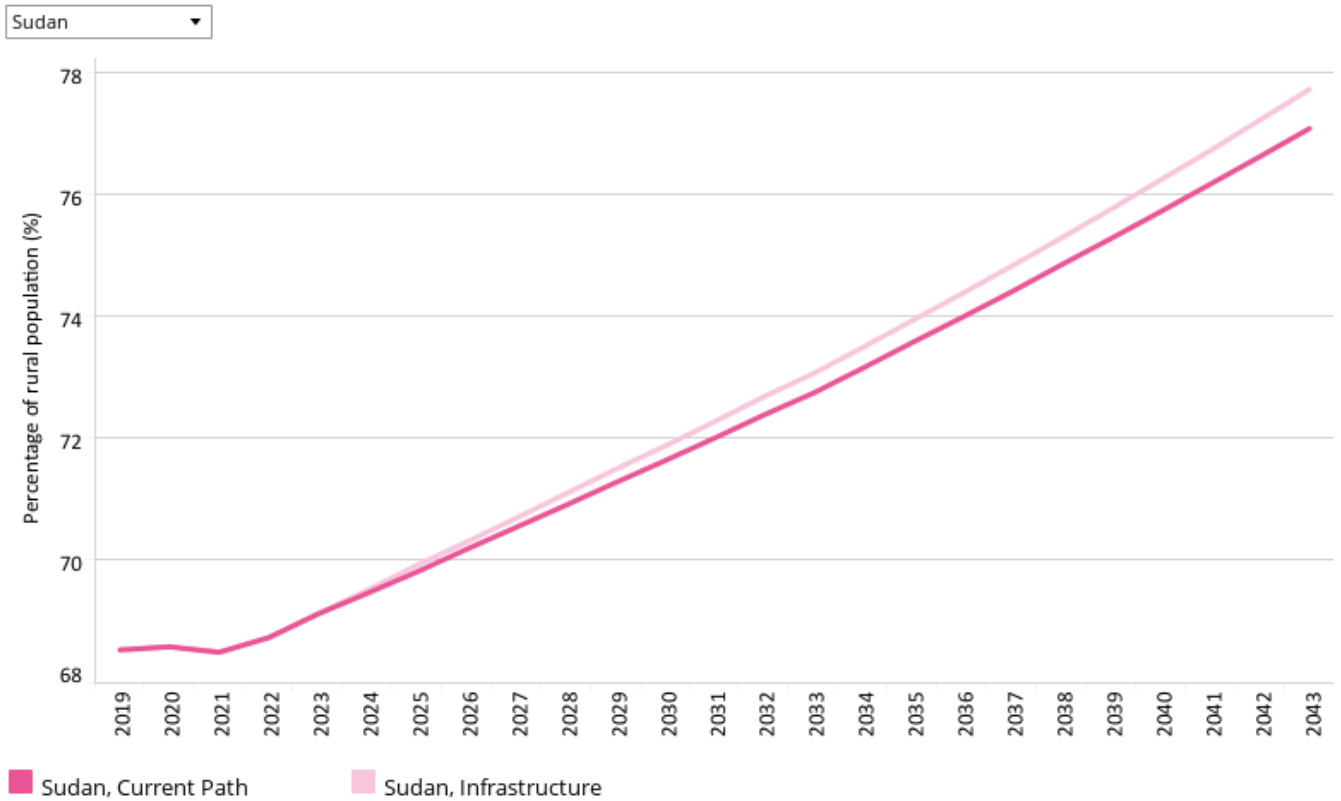
The intervention is explained [here](#) in the thematic part of the website.

In 2019, the total number of people with access to electricity in Sudan was about 22.2 million (51.3% of the population). The Infrastructure scenario increases it to 53.2 million (70.3% of the population) by 2043. This is above the projected number of 51.1 million people (67.5% of the population) in the Current Path forecast.

In the scenario, by 2043 it is projected that 84.4% of the urban population in Sudan will have access to electricity compared to 82.1% in the Current Path forecast. In the Infrastructure scenario and in the Current Path forecast, respectively, 61.7%

(29 million people) and 58.3% (27.6 million people) of the rural population will have access to electricity in 2043, indicating the disparity in access to electricity between the urban and rural populations in Sudan.

Chart 48: Rural road access in CP and Infrastructure scenario, 2019–2043
 % of rural population within 2 km of an all-weather road



Source: IFs 7.63 initialising from World Bank Rural Access Index data

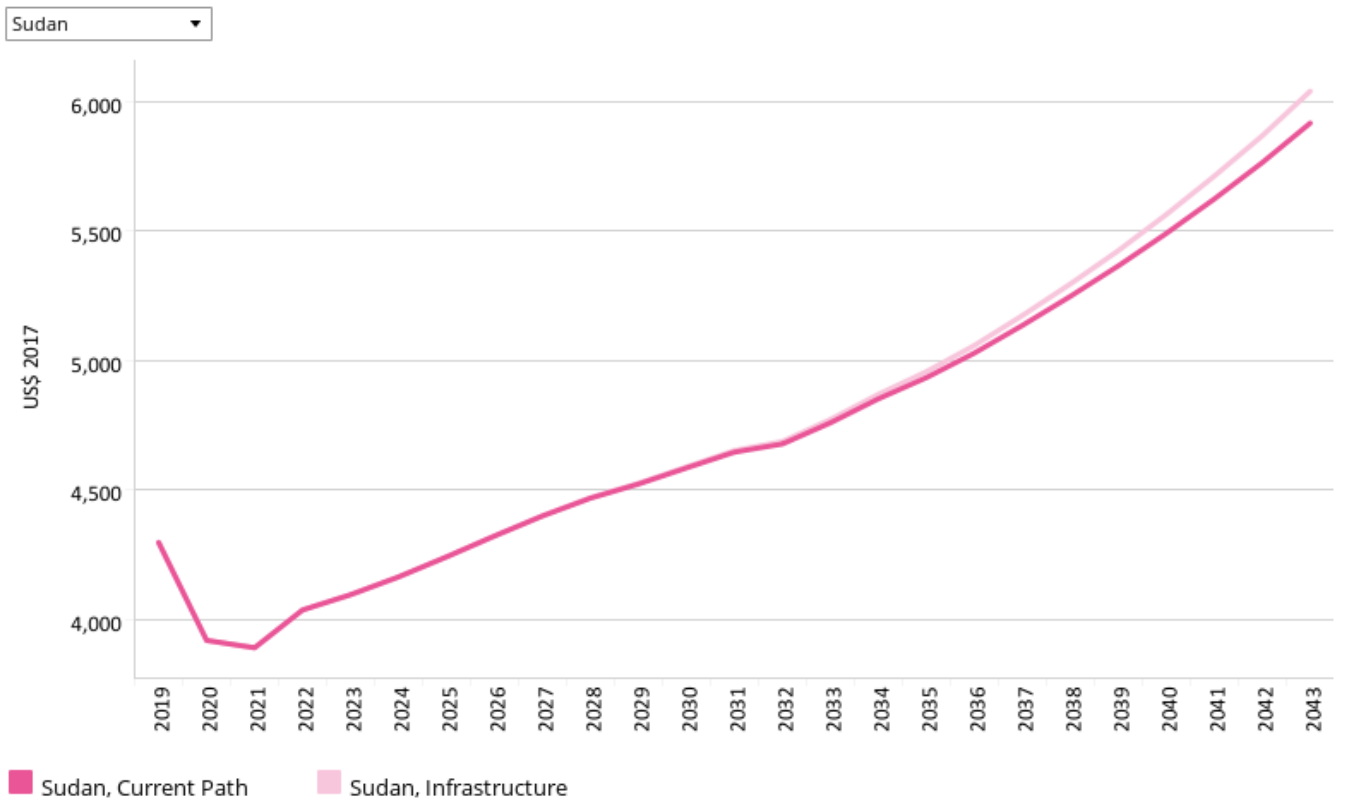
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Indicator 9.1.1 in the Sustainable Development Goals refers to the proportion of the rural population who live within 2 km of an all-season road and is captured in the Rural Access Index.

Accessibility to rural areas spurs on socio-economic development and improves the rural population's living standards. Better rural road infrastructure facilitates trade between rural and urban areas. For instance, it enables the rural population to enjoy products from nearby urban areas while allowing the urban population to more easily access agricultural products supplied by those in rural areas.

In 2019, 68.5% of the rural population in Sudan resided within 2 km from an all-weather road, above the average of 43% for low-income African countries. In the Infrastructure scenario, it is projected to increase to 77.7% by 2043, slightly above the 77.1% projected in the Current Path forecast for that year.

Chart 49: GDP per capita in CP and Infrastructure scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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Quality infrastructure enables business and industry development and increases efficiency in the delivery of social services. Critical basic infrastructure such as roads and electricity play a vital role in achieving sustainable and inclusive economic growth. Infrastructure shortages impede higher productivity and growth.

Sudan's GDP per capita is forecast to rise to US\$6 041 by 2043 in the Infrastructure scenario. This is US\$123 more than the Current Path forecast for the same year.

Chart 50: Poverty in CP and Infrastructure scenario, 2019–2043
Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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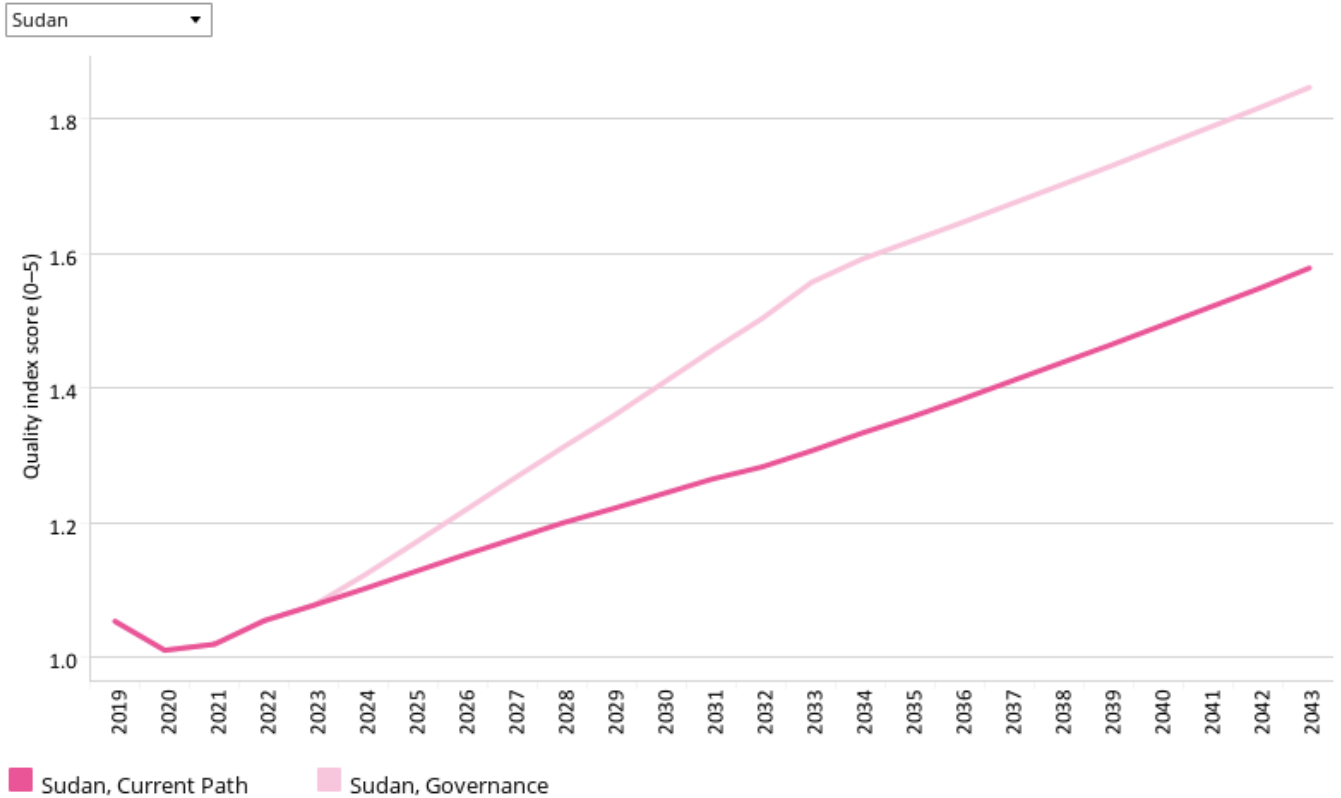
Between 2024 and 2040, the poverty rate and the number of poor people in the Infrastructure scenario are above the Current Path forecast. Heavy investment in infrastructure may lead to a consumption crunch in the short time as it is costly. However, the population is better off in the long term as infrastructure development improves the business environment, job creation and income.

In the Infrastructure scenario, the absolute number of poor people is projected to decline from 19 million in 2035 to 16.31 million (21.5% of the population) in 2043. This is equivalent to 100 000 fewer poor people in 2043, compared to the Current Path forecast.



Governance scenario

Chart 51: Gov effectiveness in CP and Governance scenario, 2019–2043
World Bank quality index score for government effectiveness



Source: IFs 7.63 initialising from Kaufmann, Kraay and Mastruzzi (2010) data

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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'.

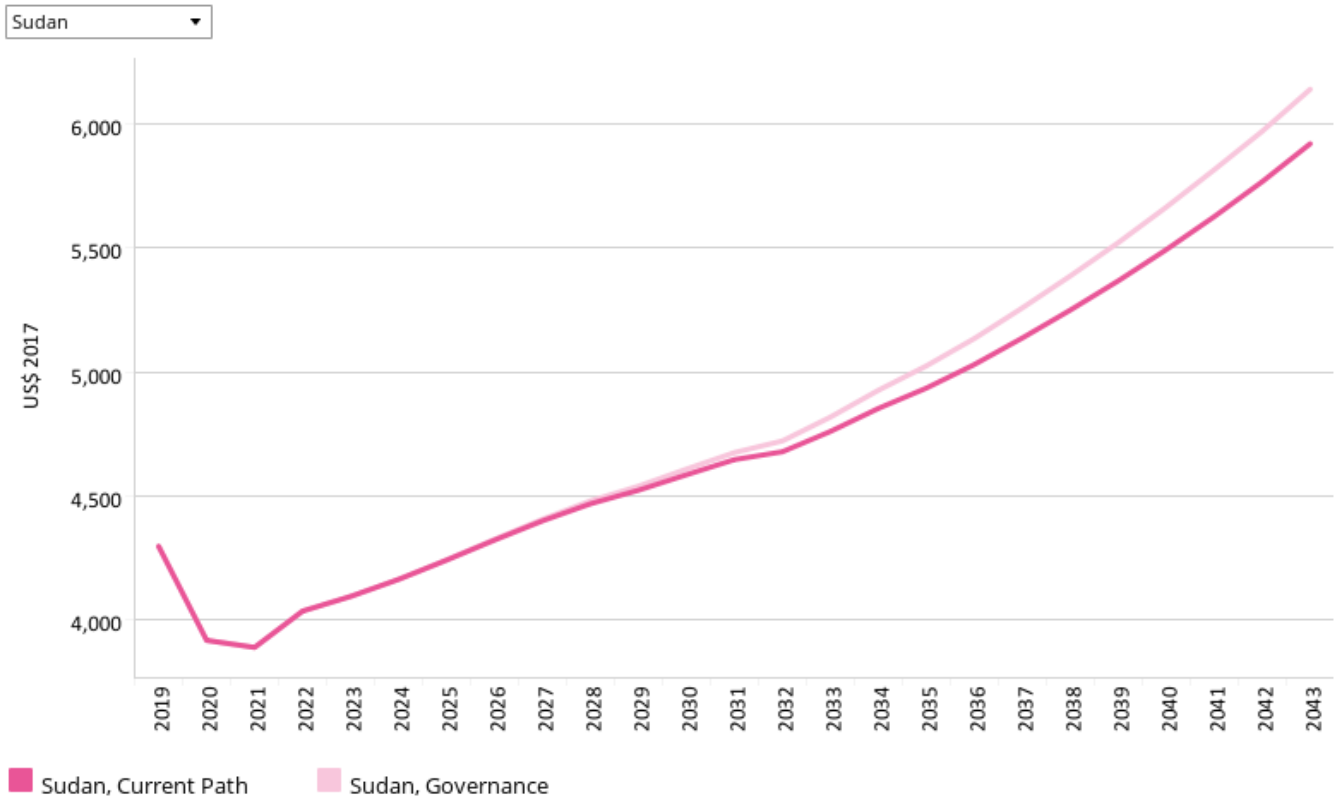
Chart 51 presents the impact of the interventions in the Governance scenario on government effectiveness.

Weak government effectiveness and the absence of strong institutional and legal mechanisms to ensure accountability hamper economic progress in Sudan. Corruption exists in every sector of the economy and in every level of the Sudanese government. According to the Sudan Democracy First Group, petty corruption is pervasive for citizens seeking government services.[11]

In 2019, the government effectiveness index score for Sudan was 1.05 (out of a maximum of 5). In the Current Path forecast and in the Governance scenario, the score for the country is projected to increase. The projected score for

government effectiveness in the Governance scenario by 2043 is 1.85. This is 0.27 points higher than the projected score of 1.58 in the Current Path forecast for the same year. However, Sudan will still have a lower government effectiveness score than the Current Path forecast average of 1.9 for Africa low-income countries by 2043.

Chart 52: GDP per capita in CP and Governance scenario, 2019–2043
Purchasing power parity



Source: IFs 7.63 initialising from UN Population Division World Population Prospects and World Development Indicators data

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In the Governance scenario, Sudan's GDP per capita is projected to increase to US\$6 137 in 2043, which is US\$219 more than the Current Path forecast for the same year. The GDP per capita of US\$6 137 in the scenario in 2043 is above the Current Path forecast average of US\$3 790 for low-income countries in Africa for the same year.

Critical determinants of growth depend on governance and the institutional settings in a country. The governing elite in Sudan should set aside their selfish personal benefit to focus on the selfless common good.

Chart 53: Poverty in CP and Governance scenario, 2019–2043
Millions of people and % of total population



Sudan \$1.90



Source: IFs 7.63 initialising from UN Population Division Population Prospects estimate, World Development Indicators population data and PovcalNet World Bank data

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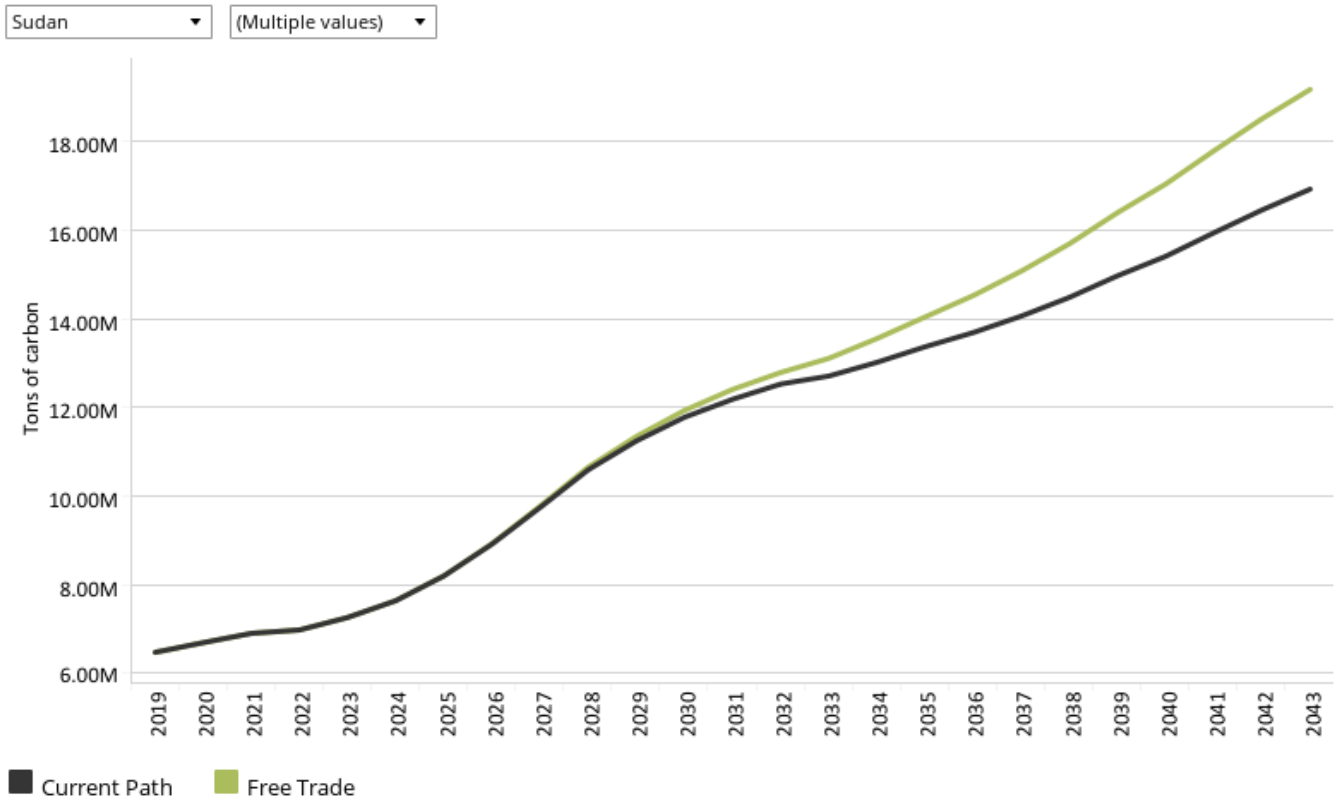
Using the US\$1.90 poverty threshold for low-income countries, the poverty rate in Sudan is projected to decline to 20.6% in 2043 in the Governance scenario, which is above the average of 25.1% for low-income countries in Africa. The poverty rate of 20.6% in the Governance scenario in 2043, equates to roughly 840 000 fewer poor people than in the Current Path forecast by 2043.



Impact of scenarios on carbon emissions

Chart 54: Carbon emissions in CP and scenarios, 2019–2043

Million tons of carbon (note, not CO₂ equivalent)



Source: IFs 7.63 initialising from Carbon Dioxide Information Analysis Center data

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

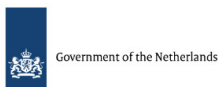
In 2019, Sudan released about 6.5 million tons of carbon, and in the Current Path forecast will release 16.9 million tons by 2043 — an increase of 160%. Like many developing countries, the country will disproportionately suffer from climate change, which it has contributed very little to. Nonetheless, the country must reduce its carbon emissions and move towards renewable energy for sustainable growth to mitigate climate change.

The Free Trade and Agriculture scenarios have the most significant impact on carbon emissions in Sudan. The Demographic scenario has the lowest level of carbon emissions. The reduction in population growth curtails population pressure on the utilisation of resources and hence minimises environmental degradation. Except for the Leapfrogging scenario, the quantity of carbon emissions in all the scenarios is higher than the Current Path forecast in 2043. By 2043, the carbon emissions range from 14.6 million tons in the Leapfrogging scenario to 19.2 million tons of carbon in the Demographic scenario

Endnotes

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Kouassi Yeboua (2024) Sudan. Published online at futures.issafrica.org. Retrieved from <https://futures.issafrica.org/geographic/countries/sudan/> [Online Resource] Updated 13 December 2023.

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