



ISS | AFRICAN FUTURES

CEN-SAD

Sectoral Scenarios for CEN-SAD

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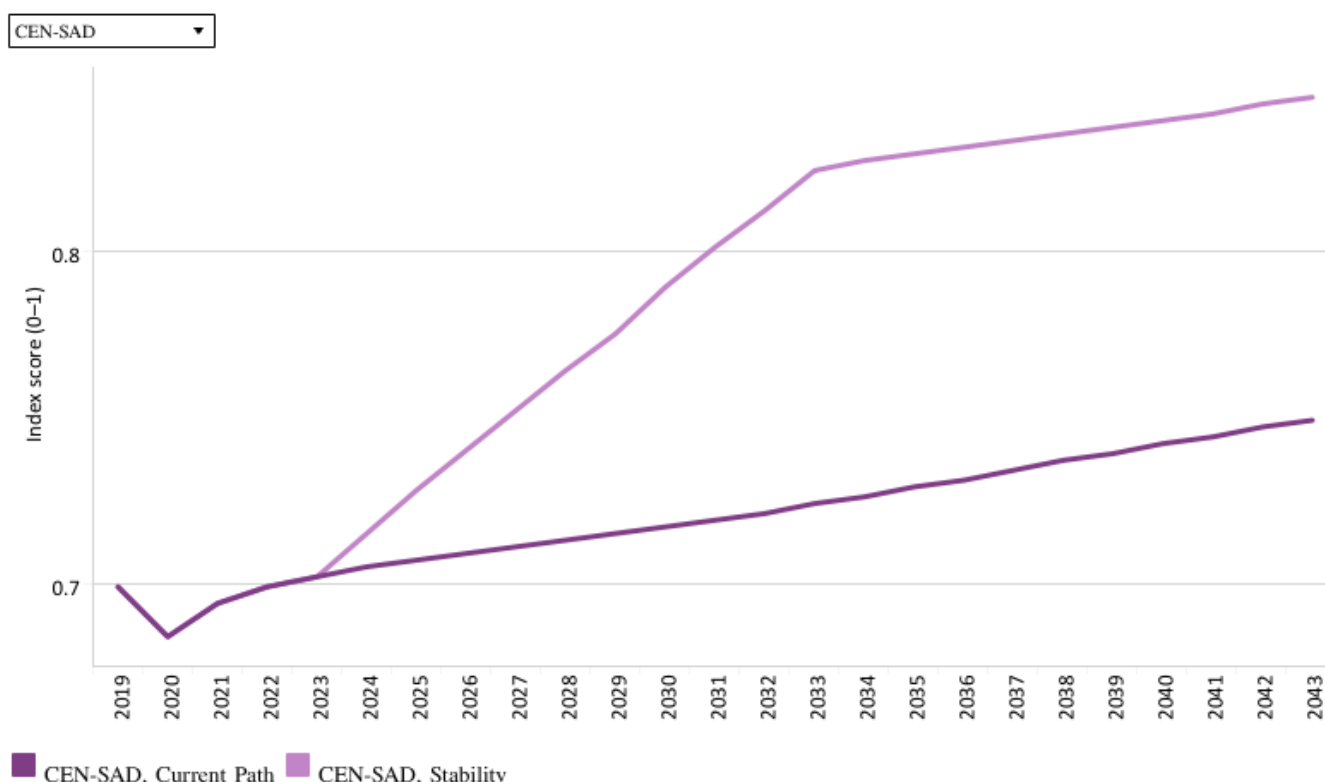
Sectoral Scenarios for CEN-SAD

- Stability scenario
- Demographic scenario
- Health/WaSH scenario
- Agriculture scenario
- Education scenario
- Manufacturing scenario
- Leapfrogging scenario
- Free Trade scenario
- Financial Flows scenario
- Infrastructure scenario
- Governance scenario
- Impact of scenarios on carbon emissions



Stability scenario

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



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 risk of regime instability and lower levels of

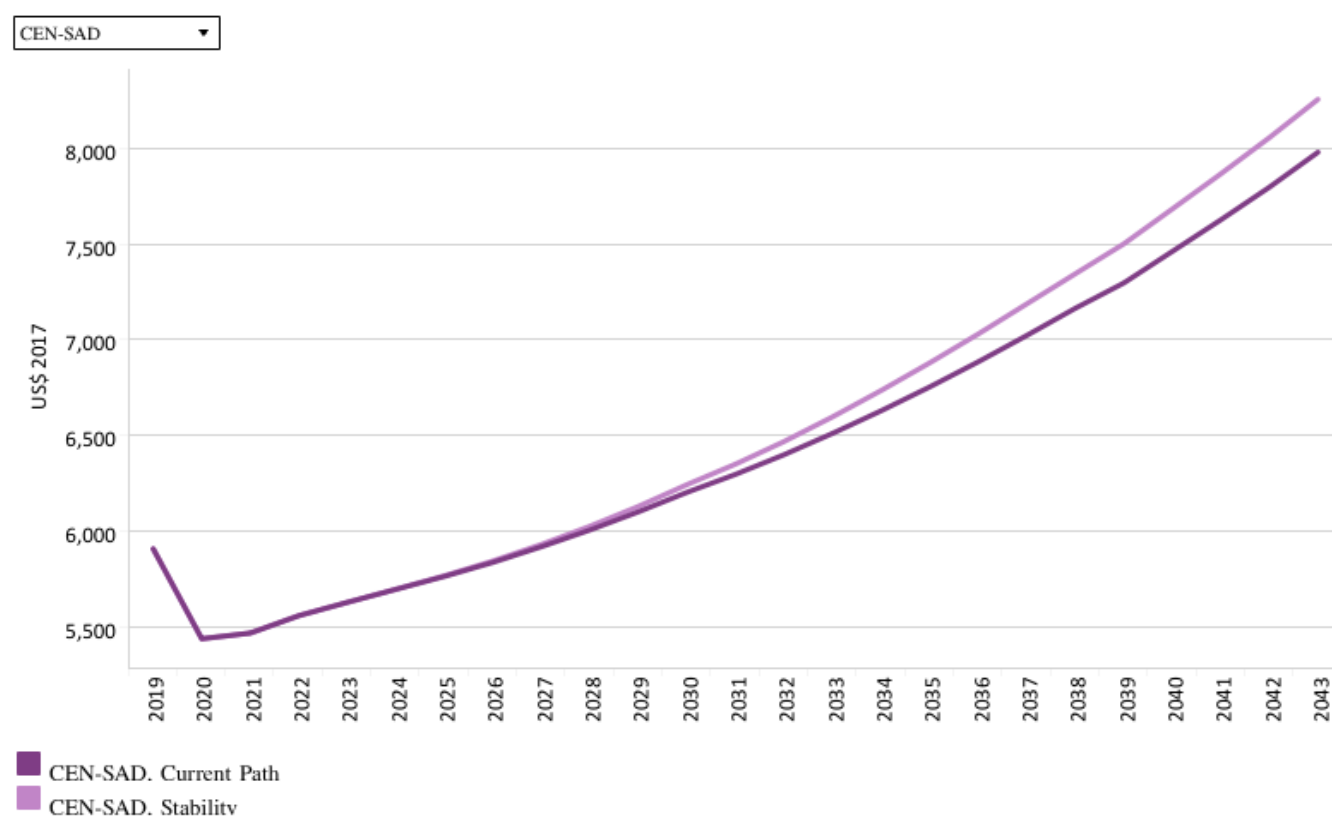
internal conflict. Stability is generally a prerequisite for other aspects of development and this would encourage inflows of foreign direct investment (FDI) and improve business confidence. Better governance through the accountability that follows substantive democracy is modelled separately.

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

IFs governance security index ranges from 0 (low security) to 1 (high security). CEN-SAD's score on the index is expected to rise from 0.7 in 2019 to 0.85 by 2043 in the Stability scenario, an increase of 0.1 above the Current Path forecast of 0.75 for the same year. The average for Africa in the Current Path forecast will be 0.74 by 2043.

Somalia will see the biggest increase from 2019 to 2043, as its score rises by 53.5% in the Stability scenario. The large increase comes from the lowest base among CEN-SAD's members, which is due to the continued terrorist activity that hampers Somalia's development and stability. The Central African Republic (CAR) and Sudan will also see sizable increases above 30% by 2043, while on the other end of the spectrum, Tunisia would see the lowest increase, as it comes from a very high base of 0.85 in 2019.

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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The Stability scenario increases CEN-SAD's GDP per capita by US\$ 275 above the Current Path forecast for 2043, increasing the gap to Africa's average from US\$622 in 2019 to US\$1 096 in 2043.

Guinea, Somalia and CAR will experience the largest increases compared to their Current Path forecasts, with Guinea seeing a nearly 9% increase. Stable countries such as Ghana, Egypt and Tunisia will see small increases below 3%.

Chart 15: Poverty in CP and Stability 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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The Stability scenario reduces CEN-SAD's poverty rate by 1.9 percentage points compared to the Current Path forecast for 2043, a decline which equates to 22.5 million fewer people being extremely poor.

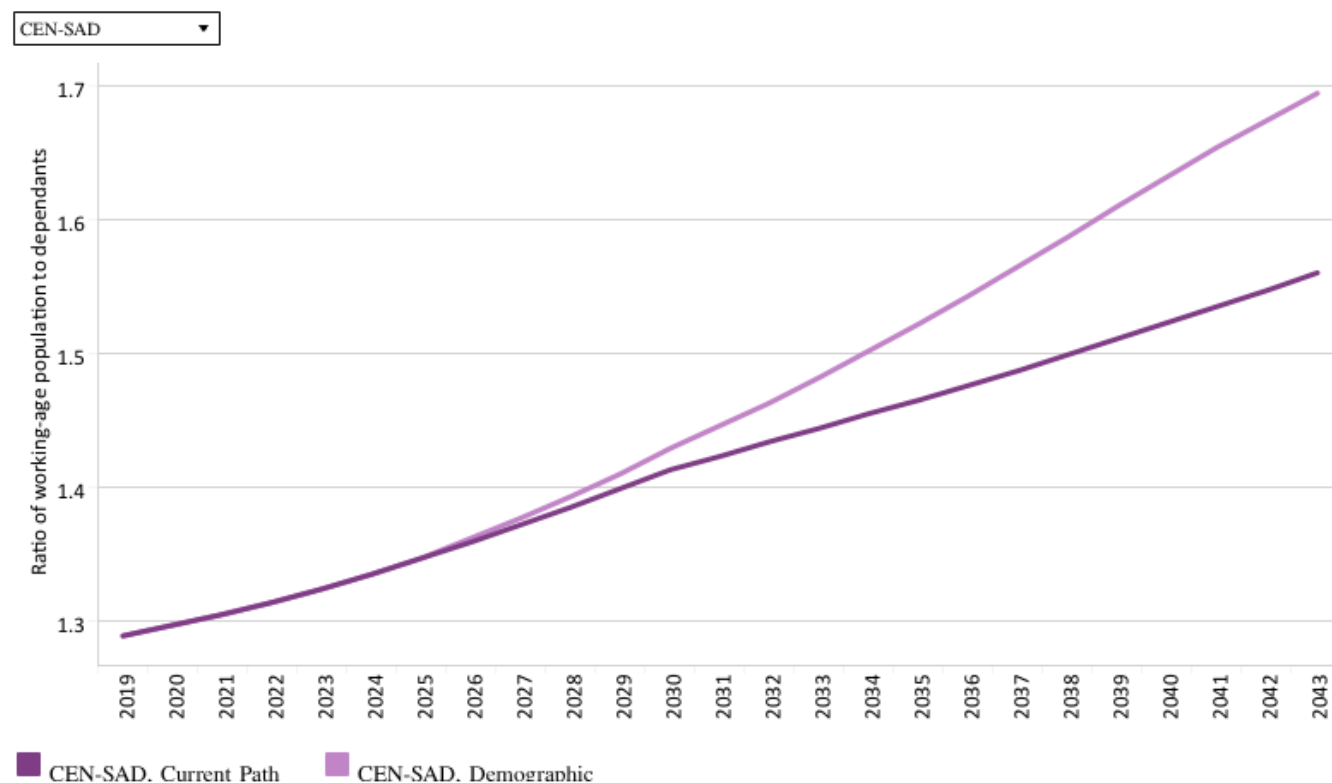
Somalia will see the largest decline in its poverty rate by 2043, experiencing a drop of 6.3 percentage points compared to the Current Path forecast. This is understandable given that conflict and political instability are among the leading causes of poverty in Somalia. CAR will continue to struggle with extreme poverty as its poverty rate will still be 64.4% in 2043 despite the scenario reducing the rate by 3.9 percentage points compared to 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.

On the Current Path, CEN-SAD will likely not reach the minimum ratio of 1.7 persons of the working-age population for each dependant across the forecast horizon. The ratio of the working-age population to dependants is forecast to only reach 1.56 by 2043, an increase of 0.27 compared to 2019. In the Demographic scenario however, the regional economic community (REC) is projected to reach 1.69 by 2043, thus entering a demographic dividend post the forecast horizon. This crucial stage of development must be accompanied by improved educational outcomes to ensure the larger cohort of working-age population citizens are properly skilled to find gainful employment.



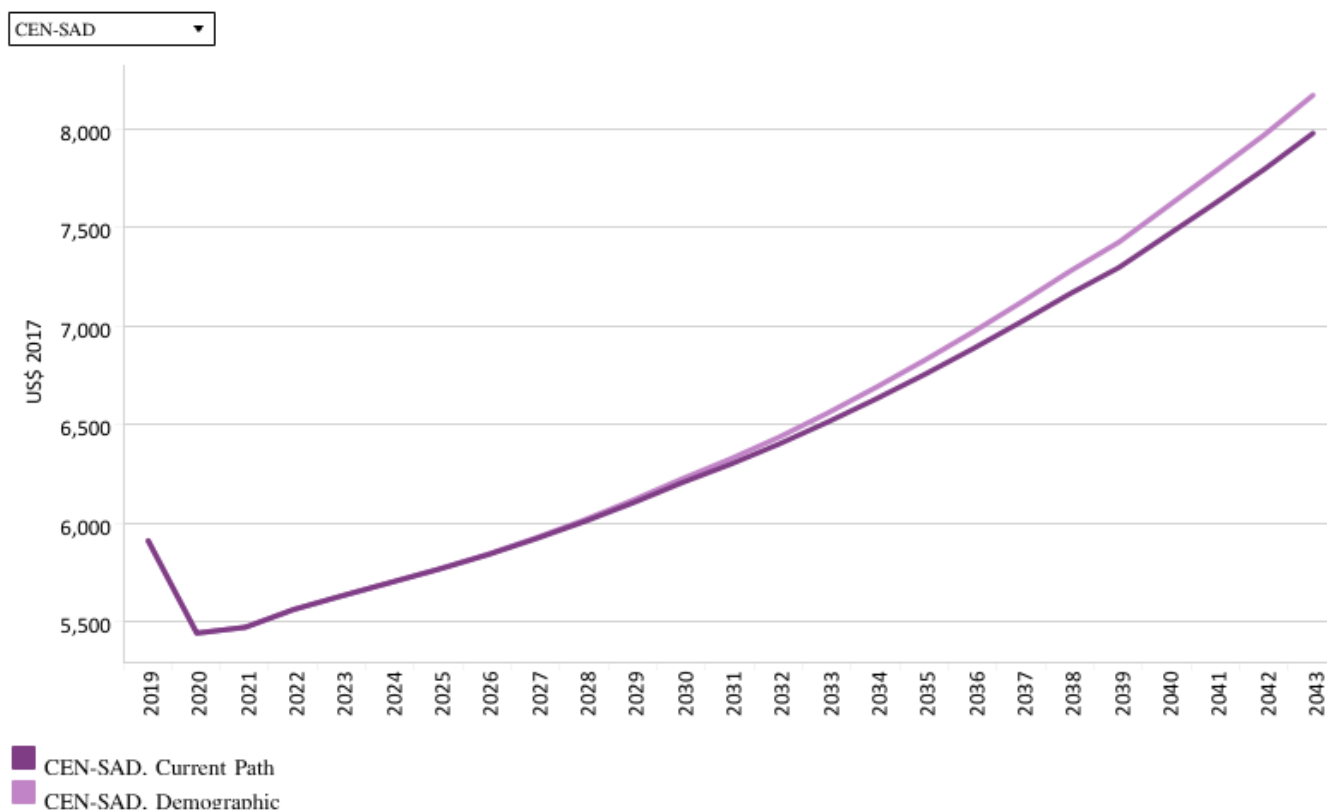
Deaths per 1 000 live births



Compared to its 2019 level, Niger is projected to see the largest percentage decline by 2043, as its infant mortality rate falls by 77.2% in the Demographic scenario. Compared to their Current Path forecast for 2043, Guinea and Somalia will see the

largest declines of over 23% in the Demographic scenario.

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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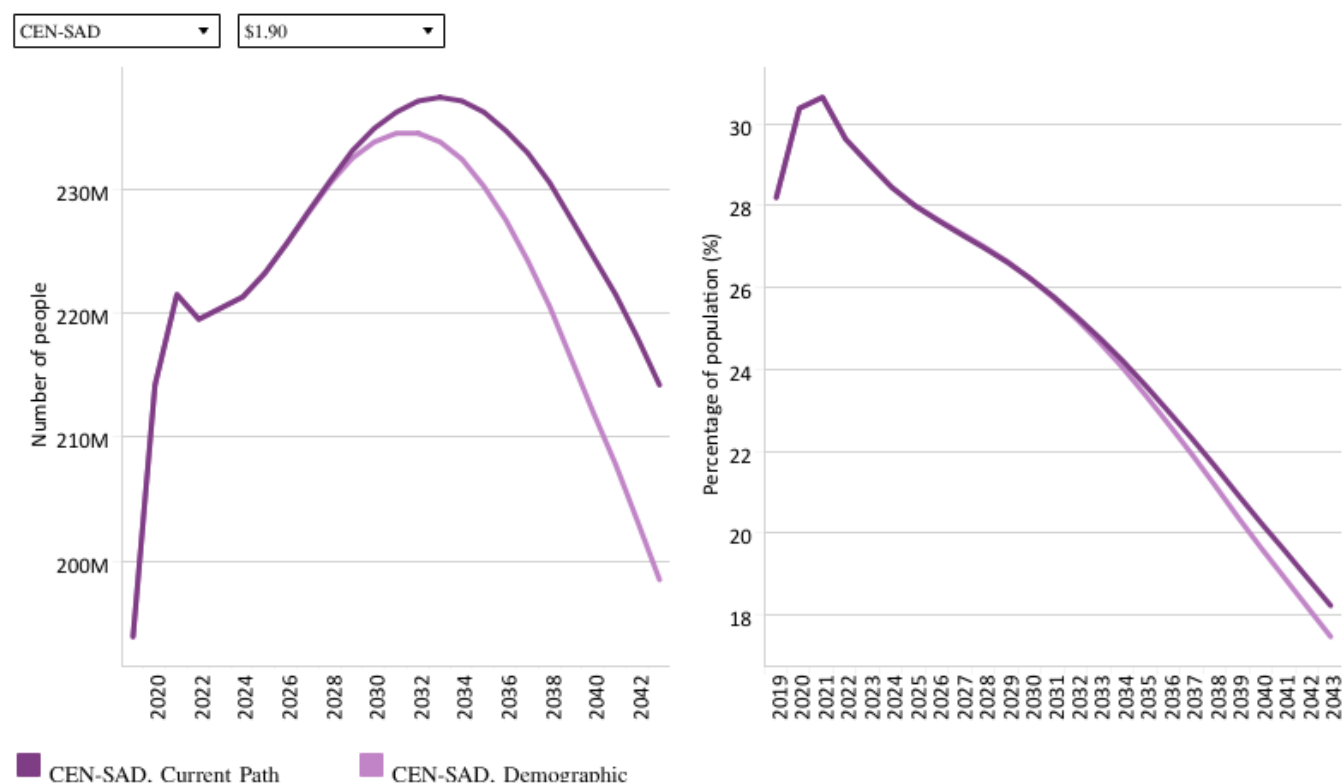
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In the Demographic scenario, CEN-SAD's GDP per capita is forecast to be US\$8 171 by 2043, US\$193, or 2.4%, larger than the Current Path forecast in the same year.

Kenya will see the largest increase, 4.7%, above its Current Path forecast for 2043, while Morocco, Cape Verde, Tunisia and Libya would all experience increases below 1%. The relatively lower infant mortality rates, and small population size in the case of Cape Verde, means the scenario has a muted effect on average incomes for these countries.

Chart 19: Poverty in CP and Demog 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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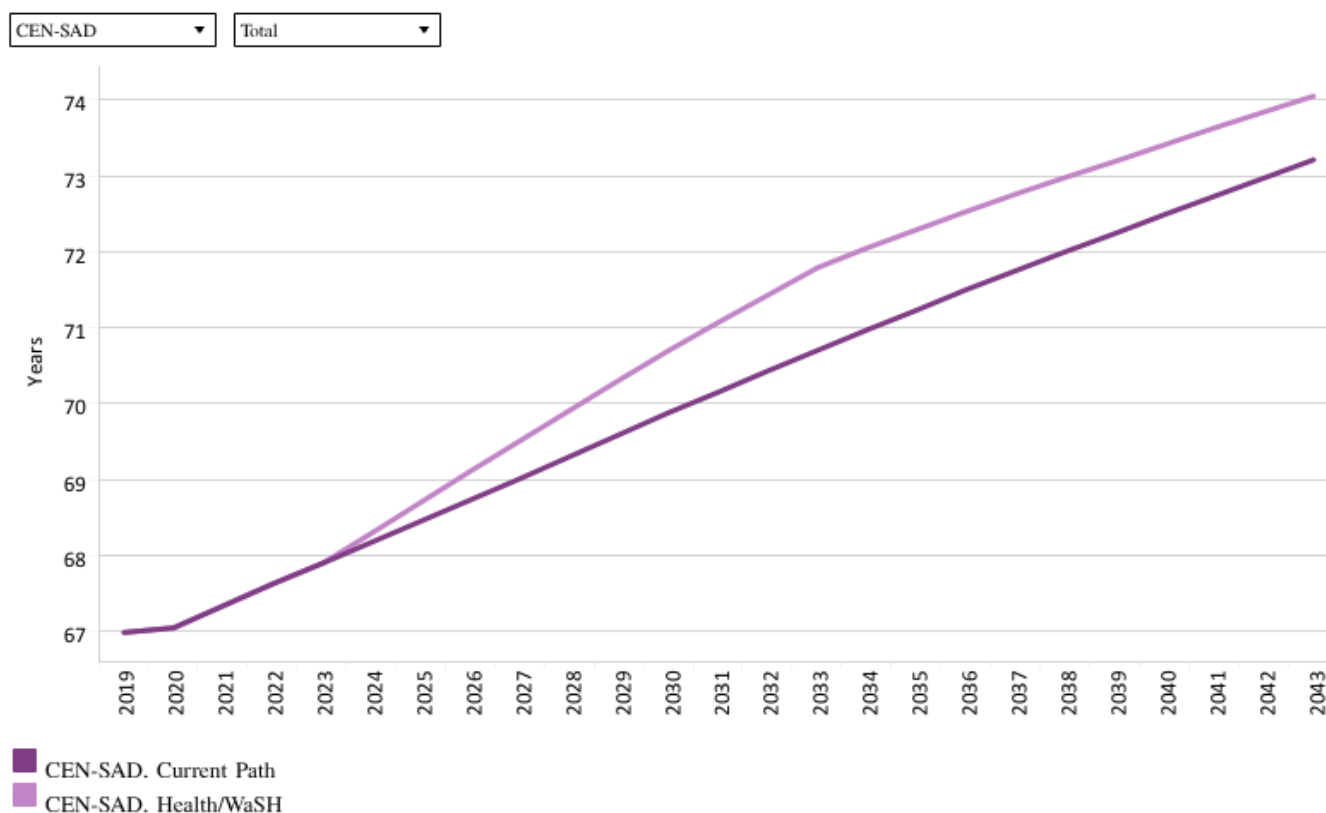
CEN-SAD's poverty rate will only decline by an extra 0.7 percentage points in the Demographic scenario compared to the Current Path forecast by 2043 — a drop equal to 15.7 million people. The poverty rates for the scenario and the Current Path forecast will remain the same until 2033, when the Demographic scenario starts to take effect.

The Demographic scenario will have the largest effect on Liberia's and Sierra Leone's poverty rates, decreasing them by more than 2 percentage points by 2043 compared to the Current Path forecast. Three countries, Morocco, Cape Verde and Tunisia, see almost no reduction in their poverty rates at the US\$3.20 per person per day threshold.



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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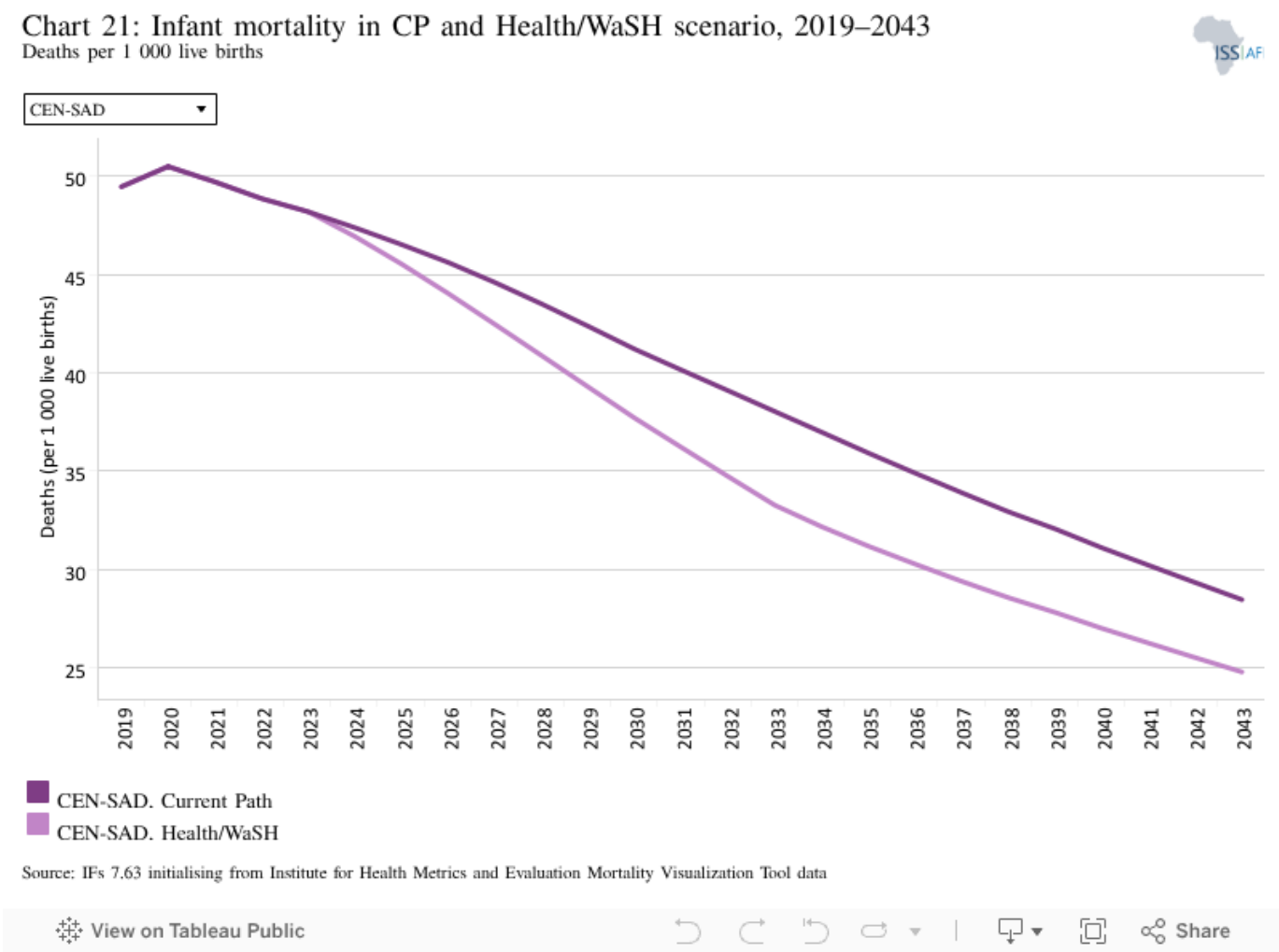
This section presents reasonable but ambitious improvements in the Health/WaSH scenario, which include reductions in the mortality rate associated with both communicable diseases (e.g. AIDS, diarrhoea, malaria and respiratory infections) and non-communicable diseases (NCDs) (e.g. diabetes), as well as 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 life expectancy for CEN-SAD was 67 years in 2019 and is expected to increase to 74.1 years in the Health/WaSH scenario by 2043, 0.9 years more than the Current Path forecast. Africa's average life expectancy by 2043 in the Current Path forecast will be 72.1 years, 2 years below CEN-SAD's life expectancy in the Health/WaSH scenario. The gap between CEN-SAD's female and male life expectancy is projected to increase from 3.3 years in 2019 to 4.1 years in 2043 in the Health/WaSH scenario.

Tunisia is projected to have the highest life expectancy at 80.8 years by 2043 in the Health/WaSH scenario, remaining the country with the highest life expectancy from 2019. CAR will continue to be the country with the lowest life expectancy at 61.4 years by 2043, but will see the largest percentage increase of 19.9% in the Health/WaSH scenario over the forecast

horizon. Relative to its fellow CEN-SAD members, Niger will benefit greatly from the Health/WaSH scenario, as it ranks 13th highest for life expectancy in 2043 compared to 20th in 2019. Mali will also jump 7 places from 17th to 10th by 2043, while Comoros drops eight places from 11th to 19th.



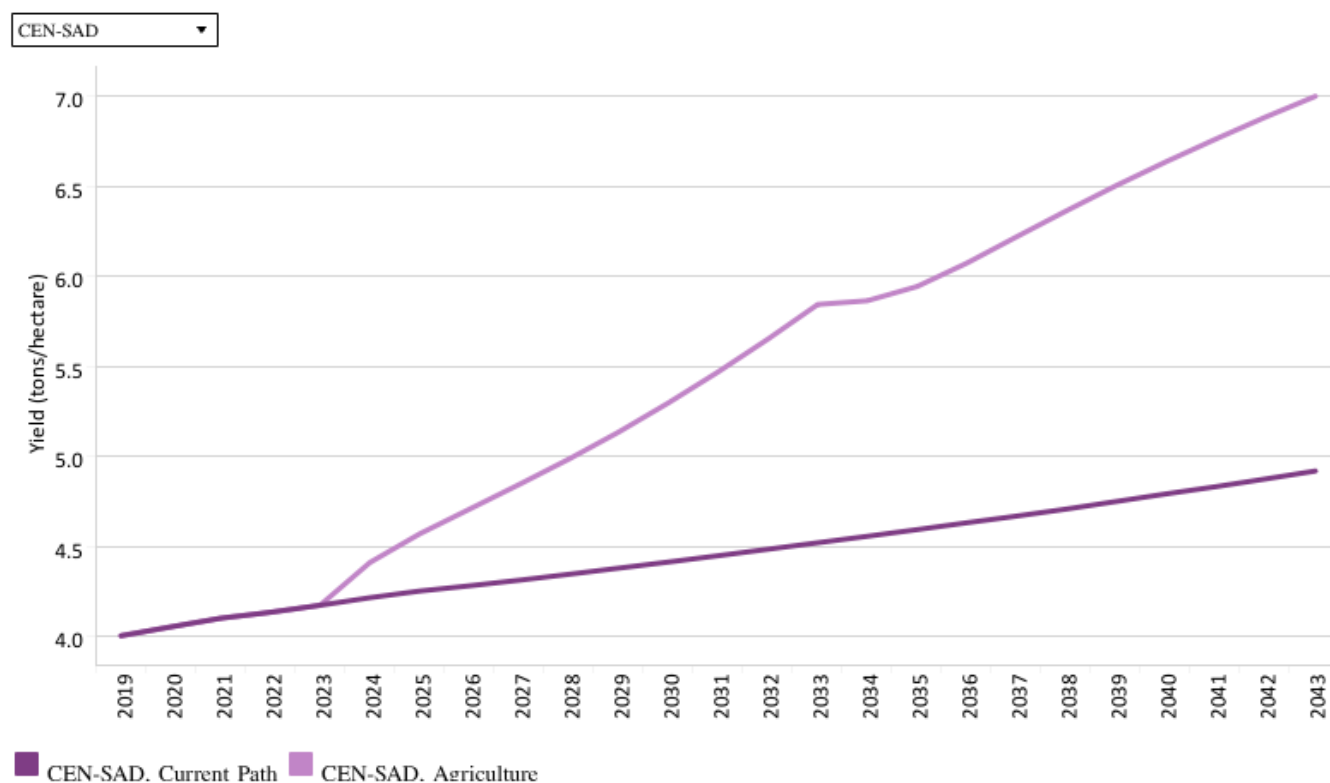
The infant mortality rate for CEN-SAD is projected to decline from 49.5 in 2019 to 24.8 by 2043 in the Health/WaSH scenario, a reduction which places it below Africa’s Current Path forecast average of 25.6 for 2043.

The country which will see the largest decrease in the Health/WaSH scenario is CAR, whose infant mortality is projected to decrease from 81 deaths per 1 000 live births in 2019 to 30.7 deaths by 2043. The North African countries of Libya, Tunisia, Morocco and Egypt see the lowest decreases, together with Cape Verde, due to their rates already being under control in 2019.



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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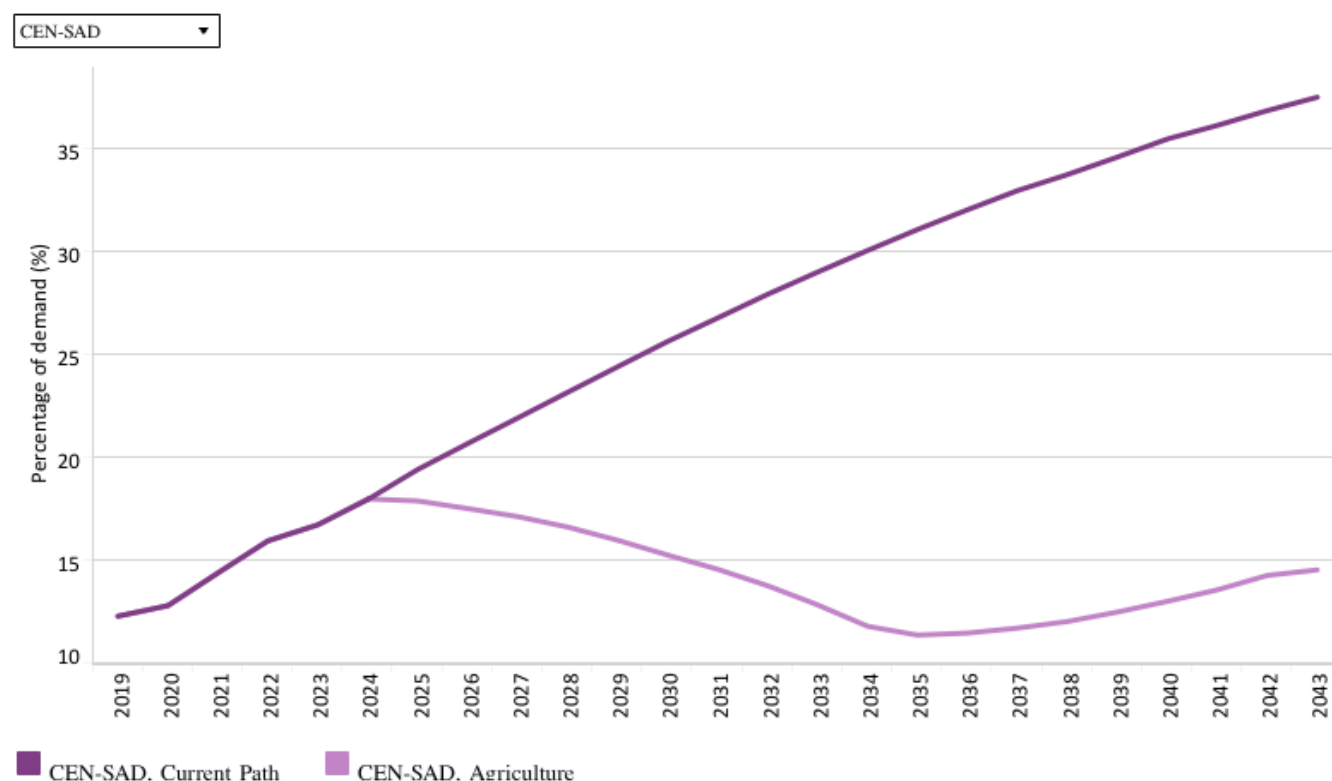
The Agriculture scenario represents reasonable but ambitious increases in yields per hectare (reflecting better management and seed and fertiliser technology), increased land under irrigation and reduced loss and waste. Where appropriate, it includes an increase in calorie consumption, reflecting the 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.

CEN-SAD's average crop yields per hectare will rise by 75% from 4 tons per hectare in 2019 to 7 tons per hectare by 2043 in the Agriculture scenario. The increase would put the REC 2.1 tons per hectare above the Current Path forecast for 2043. The country with the highest average crop yields per hectare in 2019 was Egypt with 29.3 tons per hectare, with the lowest being Niger with 0.8 tons per hectare. By 2043 in the Agriculture scenario, Djibouti would have the highest average yields per hectare at 41.4 tons per hectare, 14.6 tons per hectare higher than its Current Path forecast, with Egypt ranking second with 32.2 tons per hectare, 4.2 tons per hectare higher than its Current Path forecast. There is a large discrepancy between the size of these two countries however, and Egypt produces more in absolute terms, only behind Nigeria whose total agricultural production is the highest for CEN-SAD members.

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

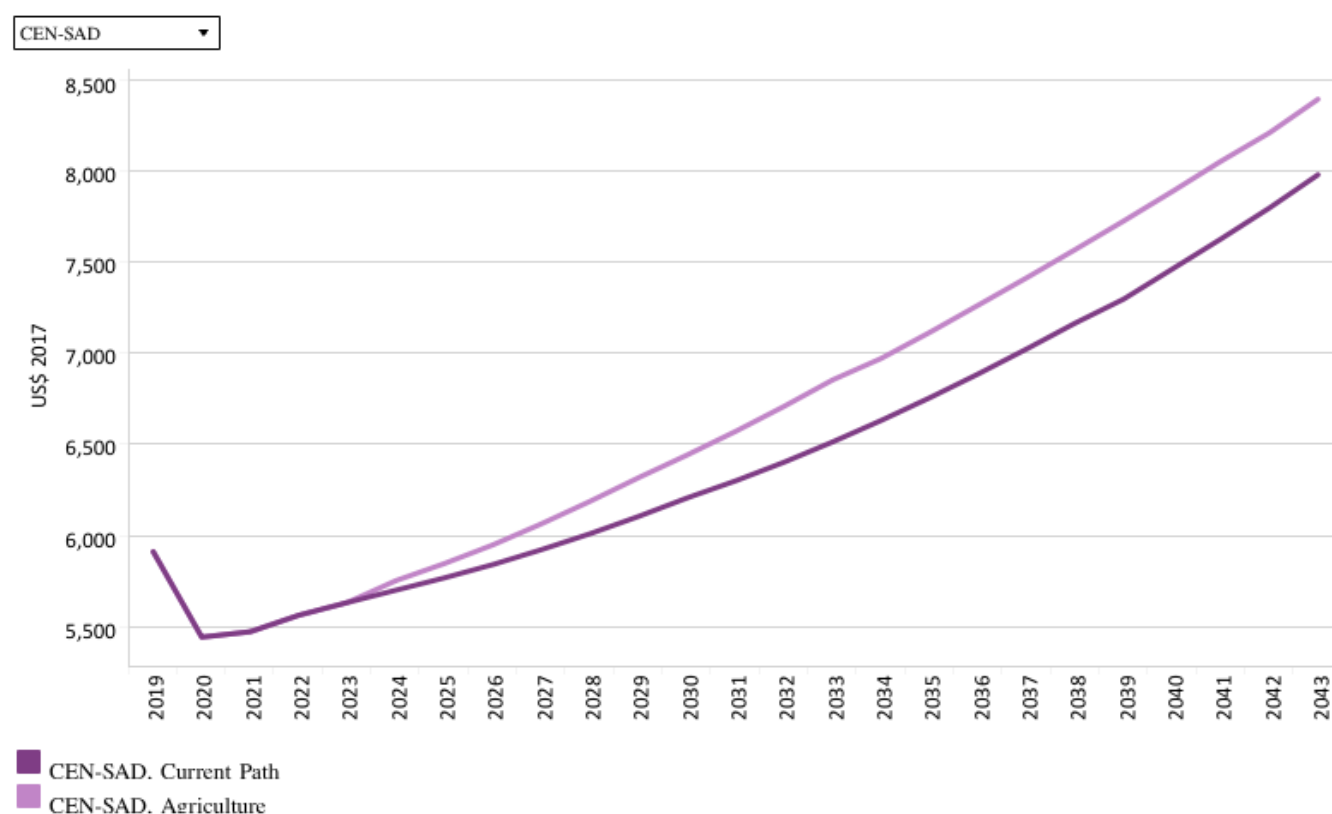
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CEN-SAD had a food security situation comparable to Africa's average, whose net agricultural imports as a per cent of agricultural demand equalled 12.2% in 2019 compared to Africa's 10.9%. The Agriculture scenario will dramatically alter the course of the REC's dependence on food imports: by 2043, the agricultural imports dependence will be 14.5% of total demand compared to 37.5% in the Current Path forecast, translating to a much more manageable food security situation.

Individually, the degree to which countries can provide for their own citizens differs markedly: Djibouti imported almost all of its food in 2019, with a rate of 97%, while Côte d'Ivoire had a surplus equivalent to 1% of total demand. By 2043, nine countries, Comoros, Libya, Guinea, Côte d'Ivoire, Burkina Faso, Togo, Ghana, Guinea-Bissau and Morocco, will have an agricultural surplus, with the highest being Morocco at 29% of total demand. All nine will have agricultural surplus by 2043 in the Current Path forecast.

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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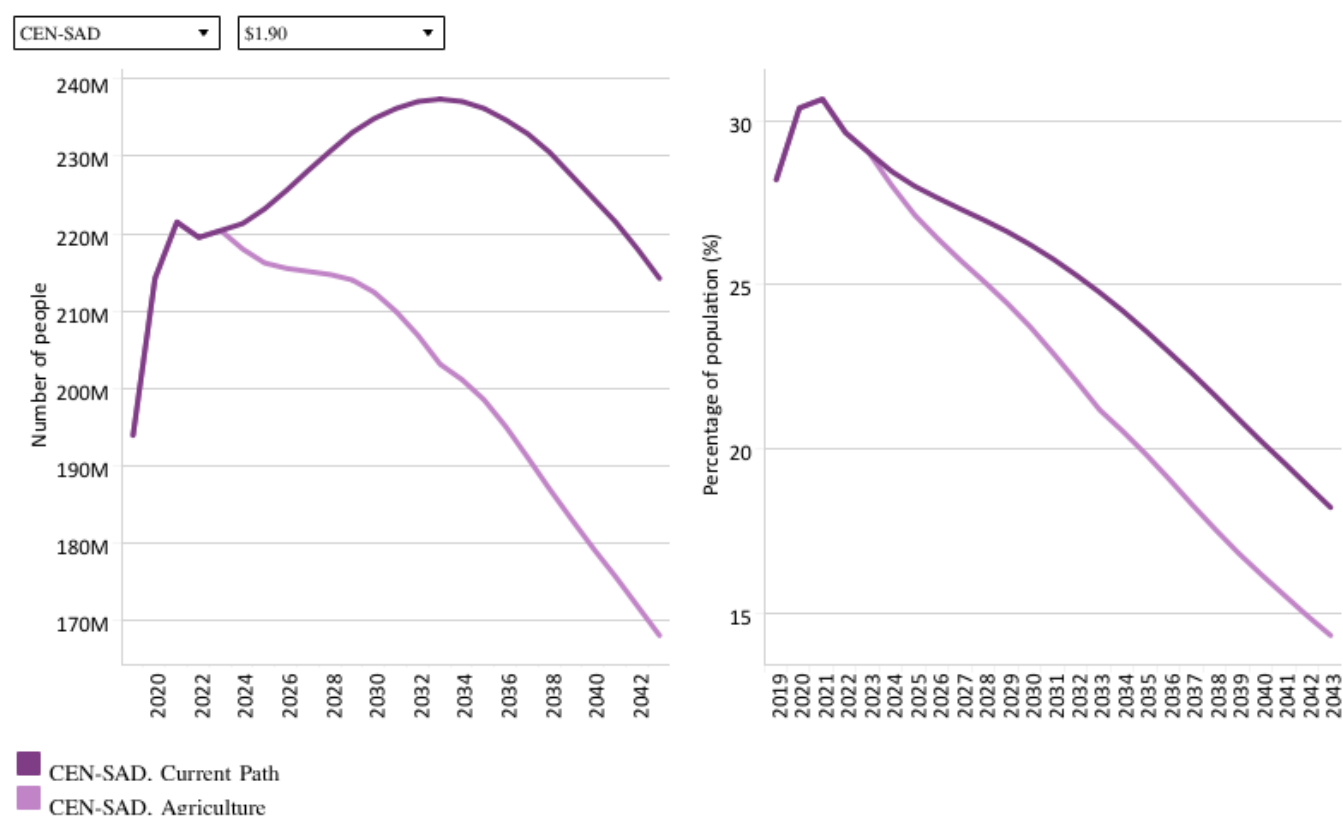
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The Agriculture scenario is projected to have a robust impact on CEN-SAD's average GDP per capita, increasing the average income by US\$414 in 2043 compared to the Current Path forecast. CEN-SAD's GDP per capita in the Agriculture scenario is US\$1 235 above Africa's Current Path forecast average for 2043.

Multiple countries would benefit greatly from an agricultural revolution, with Guinea-Bissau, Chad and Sierra Leone experiencing increases in their GDP per capita above 15% for 2043 compared to the Current Path forecast. Djibouti is the only country which would see no increase, as it lacks arable land and mostly depends on food imports to meet food consumption demands. Improvement in agriculture production in [Djibouti](#) will require heavy investment in climate-smart technologies and productivity-enhancing farming methods, given the harsh dry climate and limited arable land. This may reduce investment in other sectors with high growth potential, negatively affecting GDP growth and lowering GDP per capita. In other words, it will likely be a trade-off between food security and economic growth in Djibouti.

Chart 25: Poverty in CP and Agric 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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The Agriculture scenario reduces CEN-SAD's poverty rate by 3.9 percentage points compared to the Current Path forecast for 2043, a decline which equates to 46.2 million fewer people being extremely poor. The scenario will have the greatest impact on poverty rates of all the scenarios discussed, mostly due to 48% of CEN-SAD's labour force being employed in the agriculture sector in 2019.

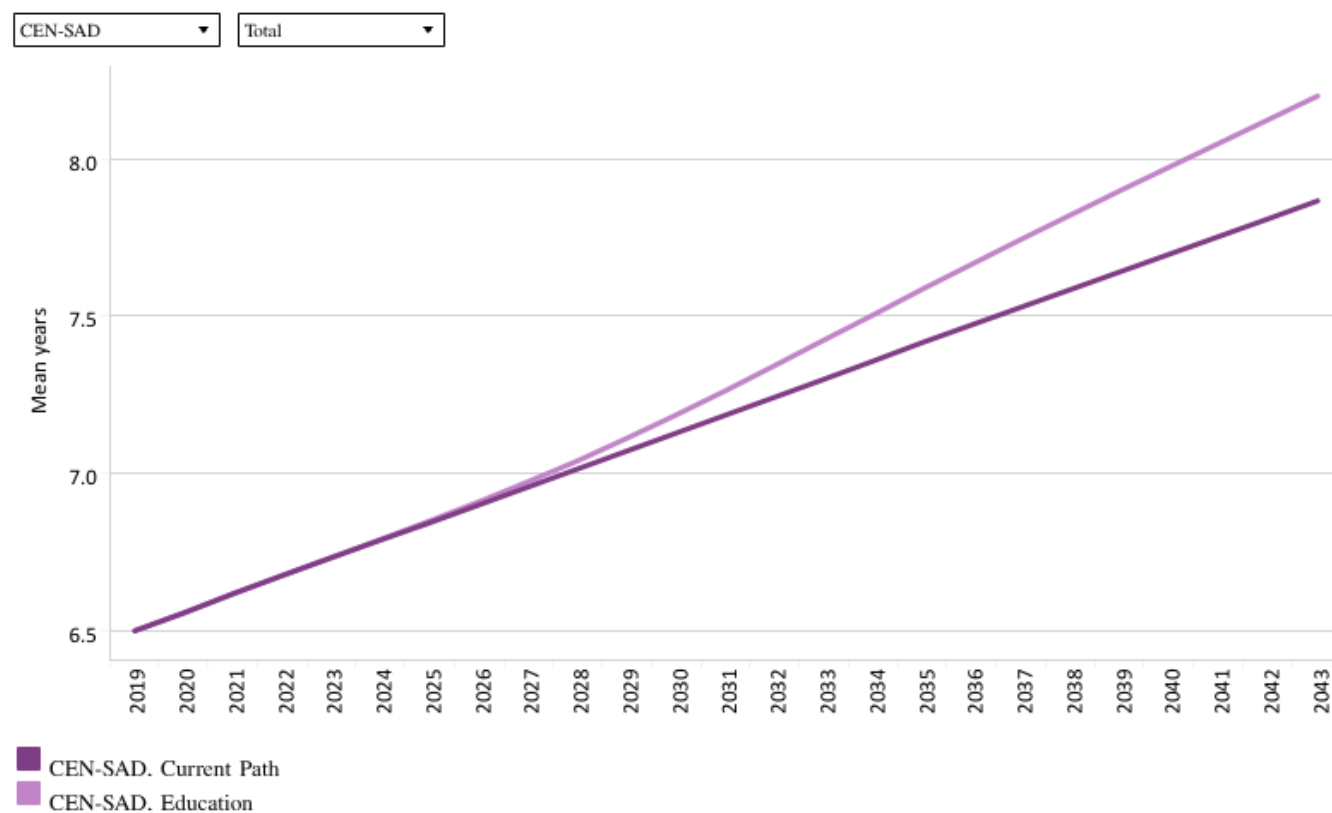
The two countries which will see the largest declines in their respective poverty rates are Guinea-Bissau and Sierra Leone, with decreases of 15 percentage points by 2043 compared to the Current Path forecast for that same year. Their robust performance is explained by agriculture adding the majority of value as a percentage of GDP in 2019. Liberia will experience a significant drop from its 2019 level of 62.9%, reaching 21.3% by 2043 in the Agriculture scenario, a decrease of 41.7 percentage points.



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.

CEN-SAD's average years of adult education, combining male and female years, was 6.5 in 2019, and is projected to climb to 7.9 years by 2043 in the Current Path forecast, while in the Education scenario average years of education would reach 8.2. Africa's average years of education was 6.2 in 2019, and will be 7.6 years by 2043 in the Current Path forecast.

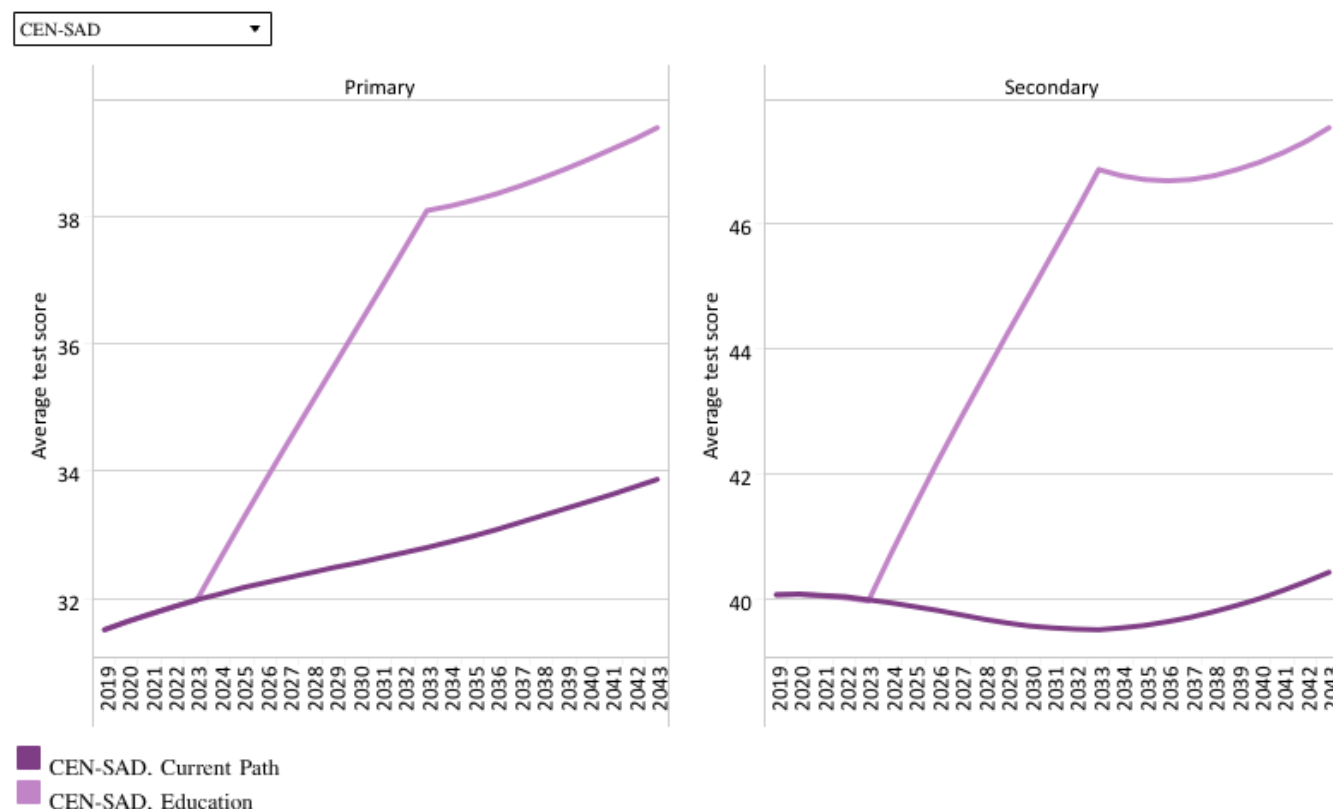
Individually, Libya had the highest mean years of education in 2019 at 8.9 years and will continue to lead the way by 2043 in the Education scenario, reaching 10.8 years. Niger had the lowest mean years of education in 2019 with 2.7, but it will more than double to reach 5.5 years in the Education scenario, 0.7 years more than in the Current Path forecast. Nigeria will see the smallest increase between 2019 and 2043 in the Education scenario, as its average years of education only rises by 1.1 years and improves on the Current Path forecast for 2043 by just 0.3 years.

The difference between female and male average years of education is a problem among CEN-SAD's members, with only

two countries having education in favour of the female population in 2019 — Libya and Mali. In the Education scenario, only three countries will have such a gap by 2043 — Libya, Cape Verde and São Tomé and Príncipe. The average gap for CEN-SAD does however decrease in the Education scenario, from 1.4 years in 2019 to 1 year in 2043. Still, action must be taken to ensure gender parity in education is reached to increase female participation in the economy and reduce the rate of population growth.

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

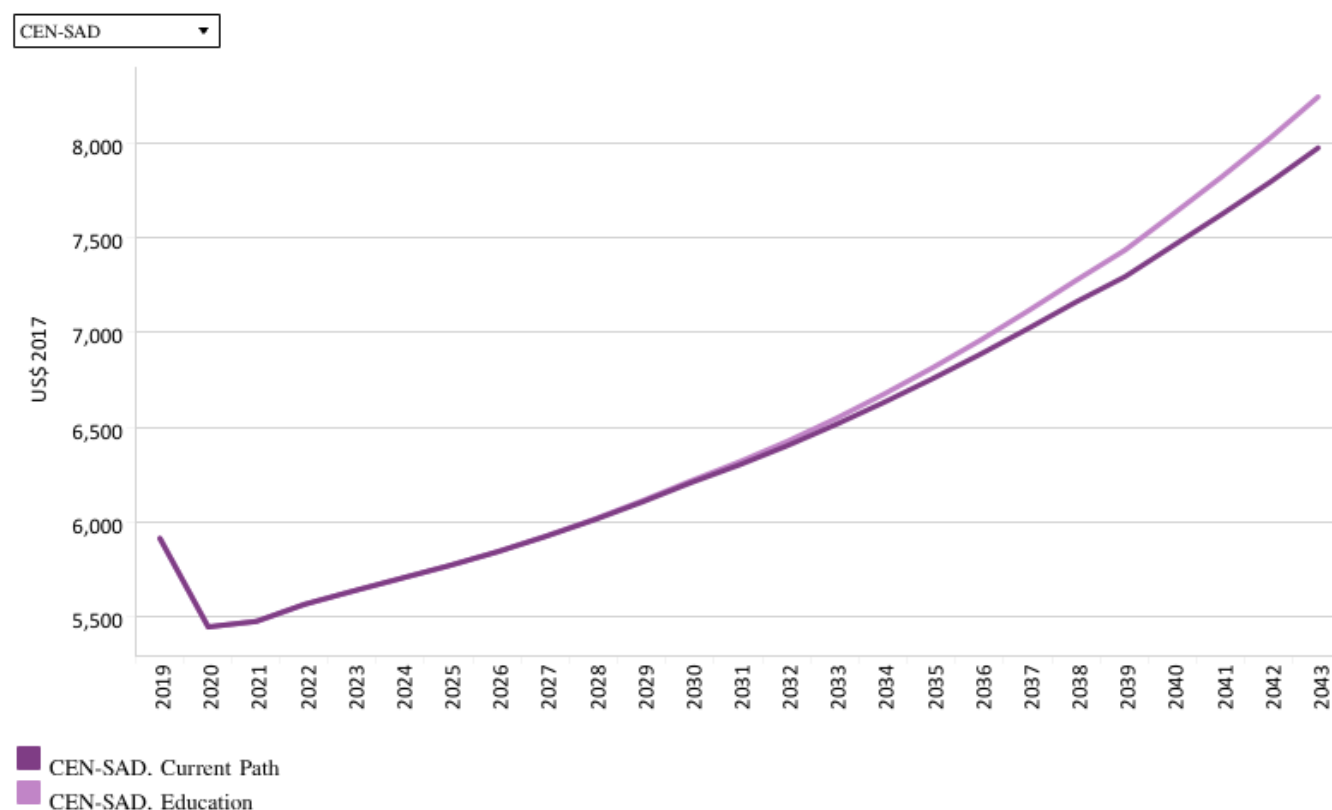
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The average test scores for learners at primary and secondary level serve as a proxy for education quality. CEN-SAD's average test score at primary level was 31.5 in 2019 and 40.1 at secondary level, and is projected to increase marginally to 33.9 and 40.4, respectively, by 2043 in the Current Path forecast. The Education scenario significantly improves on this performance, increasing the primary level score to 39.4 and the secondary level score to 47.5 by 2043, increases of 5.5 and 7.1, respectively.

The country with the highest average between primary and secondary level test score in 2019 was Tunisia with an average score of 41.4. In the Education scenario, Libya will have the highest average of 55.6 by 2043, 6.4 higher than its projected score in the Current Path forecast for the same year. Chad's average score was the lowest in 2019 at 29.6 and will continue to be the lowest ranked country by 2043, with an average score of 31.5. This does however represent progress, as the Current Path forecast projected Chad's average score decreasing by 2.8 between 2019 and 2043.

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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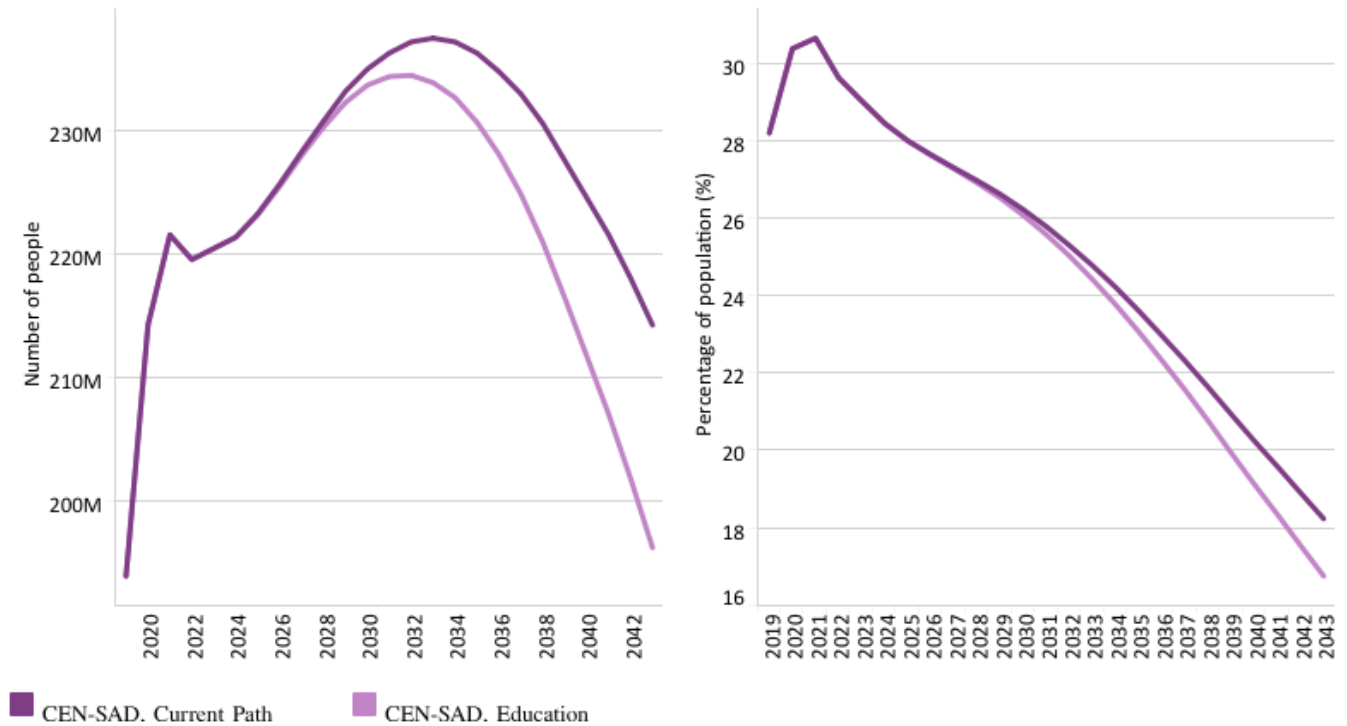
CEN-SAD's GDP per capita will increase by US\$270 in the Education scenario in 2043 compared to the Current Path forecast — a 3.4% rise which will increase its gap to Africa's Current Path forecast average to US\$1 091.

Guinea, Niger, Eritrea and Senegal will all experience increases above 4% compared to their Current Path forecasts for 2043, while Libya, Tunisia and Morocco will see the smallest increases, due to their relatively higher scores for education quality.

Chart 29: Poverty in CP and Educ scenario, 2019–2043

Millions of people and % of total population

CEN-SAD \$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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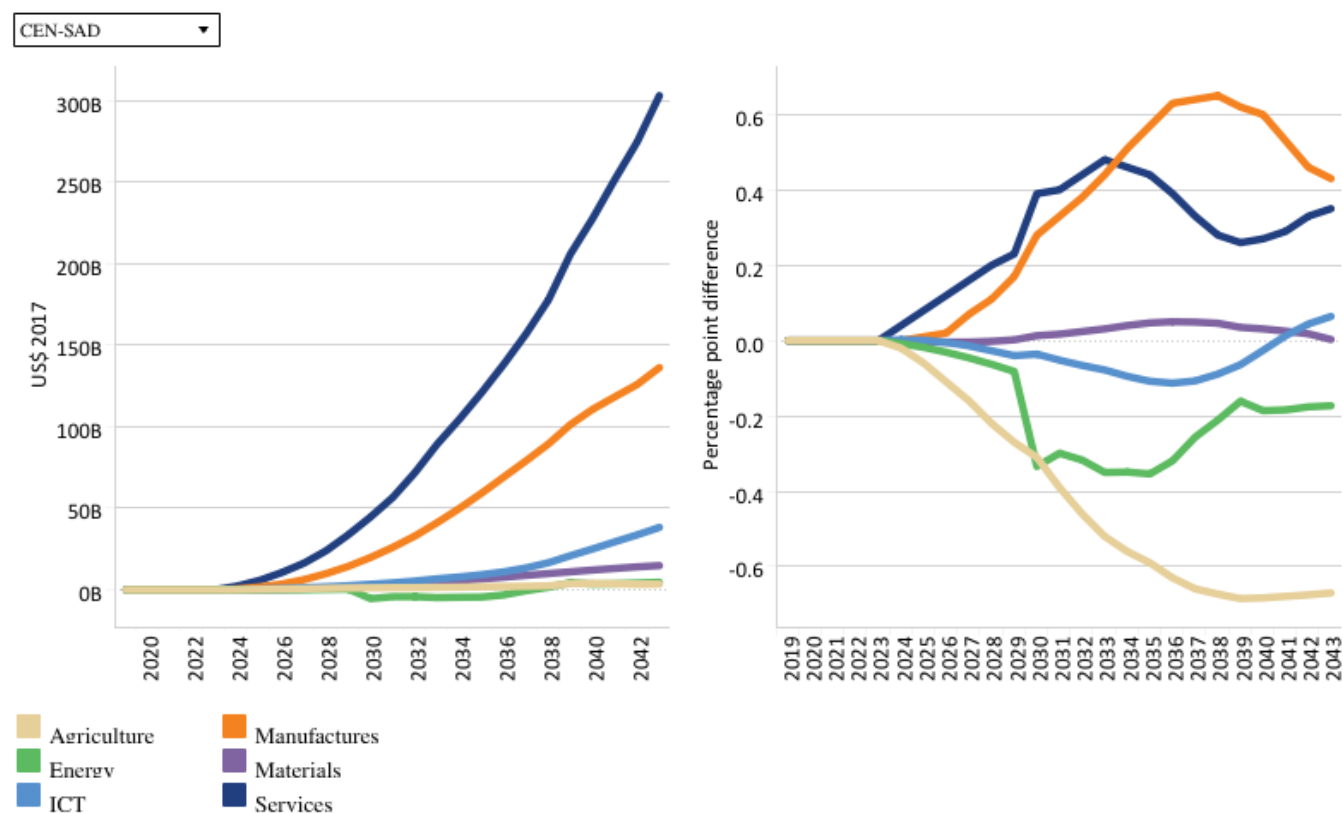
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The Education scenario reduces CEN-SAD's poverty rate by 1.5 percentage points compared to the Current Path forecast for 2043, a decline which equates to 18 million fewer people being extremely poor. Senegal will see a significant reduction of 3.3 percentage points in its poverty rate by 2043, compared to the Current Path forecast.



Manufacturing scenario

Chart 30: Value added by sector in CP and Manufac/Transfers scenario, 2019–2043
Absolute and % point difference GDP



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.

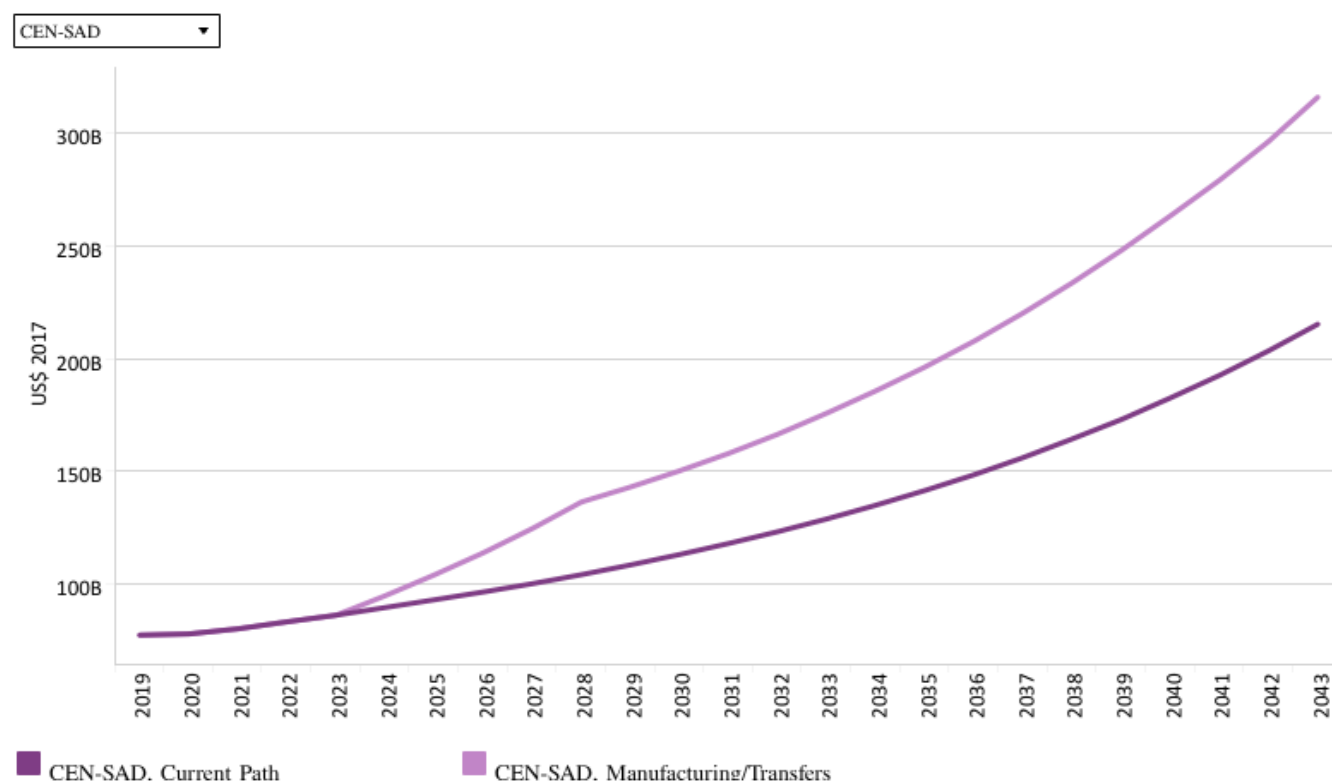
Chart 30 should be read with [Chart 8](#) that presents a stacked area graph on the contribution to GDP and size, in billion US\$, of the Current Path economy for each of the sectors.

The Manufacturing/Transfers scenario increases the size of the manufacturing sector as a proportion of GDP by 0.4 percentage points, an increase which equates to an additional US\$136.3 billion by 2043 compared to the Current Path forecast. The service sector far outstrips this however, adding an extra US\$303 billion in value by 2043 compared to the Current Path forecast.

The scenario projects Ghana and Chad will increase the sizes of their manufacturing sectors by a 1 percentage point of GDP or more compared to the Current Path forecast by 2043, while six countries, Egypt, Niger, Togo, Somalia, Mali and

Guinea, will see a slight decline. The structural shift towards manufacturing and services means agriculture's value added will constitute less a percentage of total value added. All but two countries, Libya and Djibouti, will see a reduction in their agriculture sectors, with the largest coming from Chad at 1.5 percentage points in 2043 compared to the Current Path forecast.

Chart 31: Gov welfare transfers in CP and Manufac/Transfers scenario, 2019–2043
Billions US\$ 2017



Source: IFs 7.63 initialising from World Development Indicators data

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The Manufacturing/Transfers scenario increases government welfare transfers to unskilled workers used as a proxy for the poor to tackle the increased poverty which is usually associated with the early stages of industrialisation. Industrialisation is generally funded by an initial crunch in consumption which increases poverty in the first few years. However, these efforts stimulate inclusive growth with a greater impact on poverty alleviation in the long term.

CEN-SAD is projected to spend 46.8% more on these welfare transfers by 2043 in the Manufacturing/Transfers scenario, seeing a rise from US\$215.3 billion in 2019 to US\$316.1 billion in 2043.

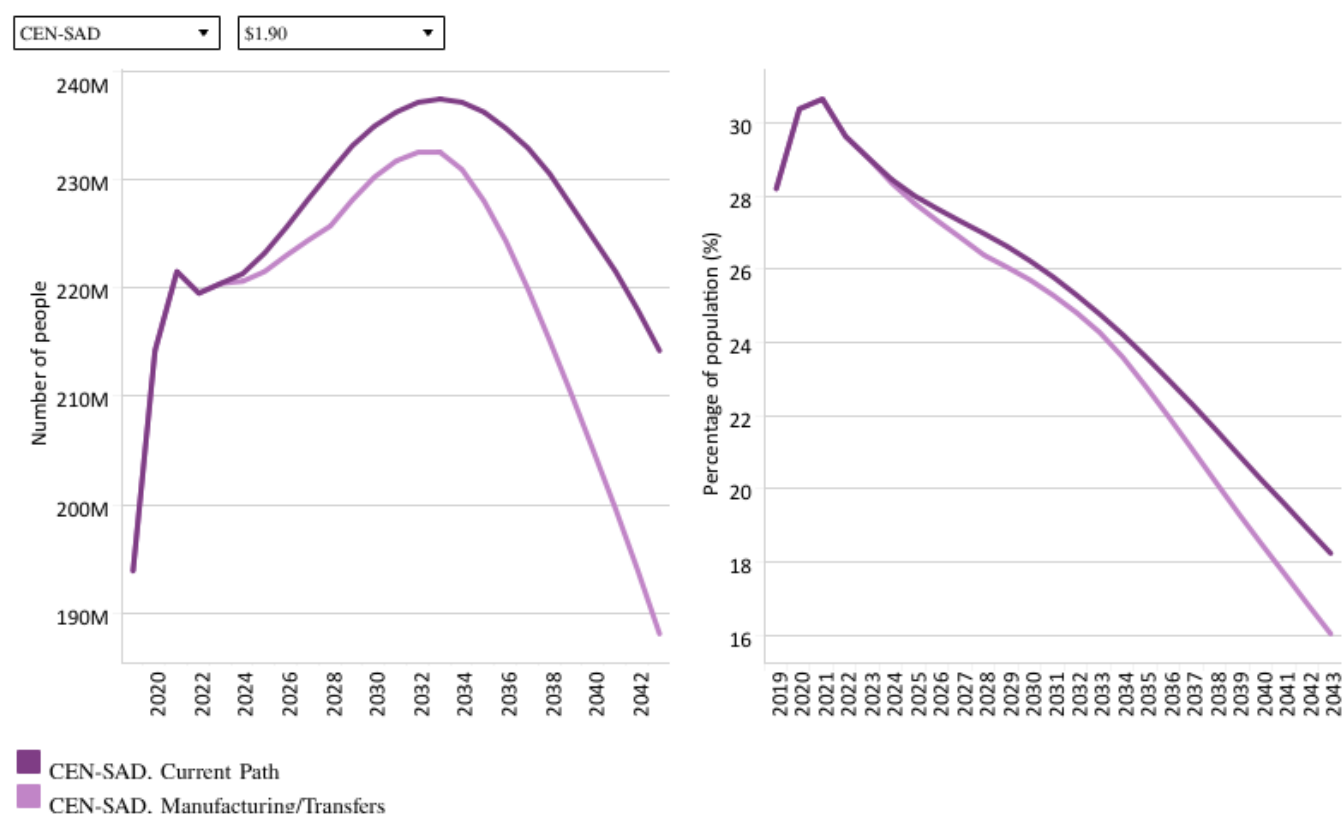
Egypt led the way in 2019, spending US\$26.5 billion on welfare transfers to unskilled works. The country is projected to spend 261% more by 2043 in the Manufacturing/Transfers scenario, a rise which improves on the Current Path forecast for the same year by US\$31.6 billion.

The scenario is projected to increase Eritrea's welfare transfers the most compared to the Current Path forecast for 2043, with the country seeing an increase of 89.9%. Six other countries, CAR, Somalia, Niger, Guinea, Togo and Sierra Leone will also see an increase above 80%.



Senegal and Nigeria will experience increases above 8% in 2043 compared to the Current Path forecast, while Libya will see a small rise of 0.9%. The scenario has large potential to increase average incomes, with three countries, Senegal, Djibouti and Ghana, projected to move above Africa's Current Path forecast average for 2043. They are projected to be below this average in the Current Path forecast.

Chart 33: Poverty in CP and Manufac/Transfers 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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The Manufacturing/Transfers scenario reduces CEN-SAD's poverty rate by 2.2 percentage points by 2043 compared to the Current Path forecast, a decline equal to 26.1 million fewer people being extremely poor. The increased welfare transfers from the government aimed at mitigating the increased poverty which is generally associated with the early stages of industrialisation helps with poverty reduction.

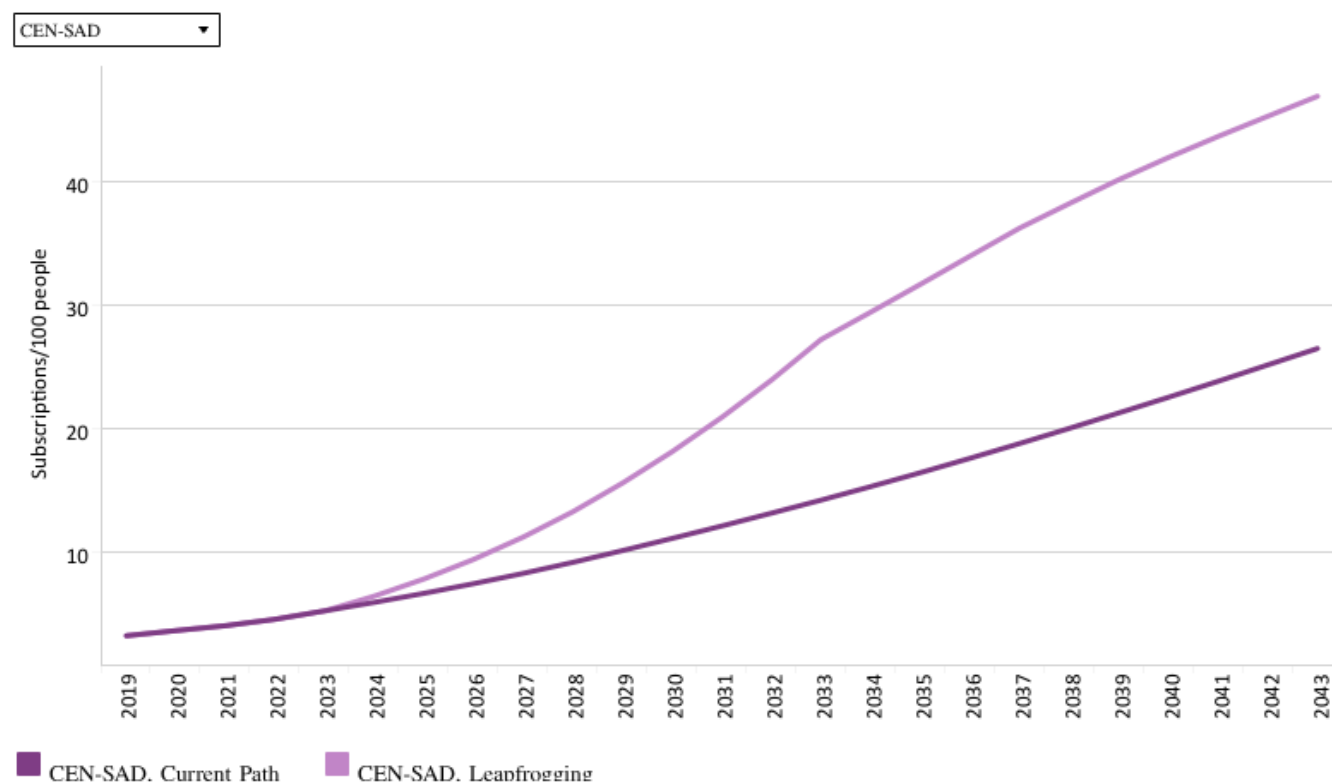
Somalia will see the largest decrease in its poverty rate compared to the Current Path forecast with a 5.9 percentage point reduction by 2043. The Manufacturing/Transfers scenario will also bring Morocco and Tunisia within touching distance of eradicating extreme poverty at the US\$3.20 per day benchmark, with Tunisia's poverty rate equalling 3.1% and Morocco's 4% by 2043. The two West African countries of Côte d'Ivoire and Ghana perform relatively worse when compared to other countries with similar poverty rates in 2019, as they will only see decreases of 11.2 and 10 percentage points by 2043, respectively, whereas Kenya and Comoros would see drops of 29.1 and 22.5 percentage points, respectively.



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.).

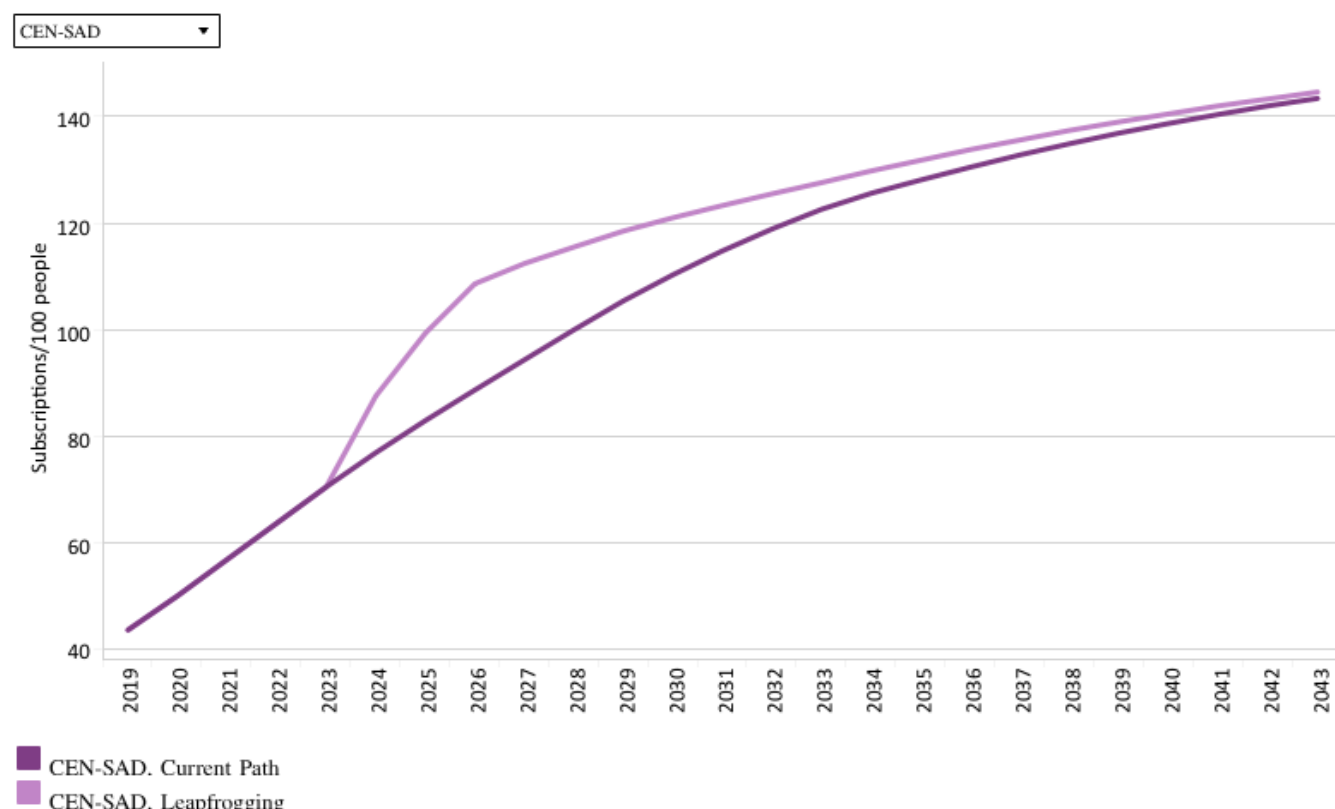
CEN-SAD's fixed broadband subscriptions are projected to increase to 47 per 100 people by 2043 in the Leapfrogging scenario — 20.5 subscriptions more than in the Current Path forecast for the same year. This growth is impressive, as it comes from a low base of 3.1 subscriptions in 2019. Increased Internet access has multiple and varied benefits, as it reduces transaction costs, optimises supply chains with positive effect on productivity.

The REC's members are expected to see massive percentage increases in fixed broadband subscriptions per 100 in the Current Path forecast, progress upon which the Leapfrogging scenario builds to further increased fixed broadband

Internet access. Nigeria will see the biggest increase in 2043 between the Current Path forecast and the Leapfrogging scenario, with a 105% increase. Senegal, Côte d'Ivoire, Kenya, Chad, Sudan and Eritrea will also experience increases above 100%. Libya will see almost no impact from the Leapfrogging scenario as the country will almost reach the level of saturation at 50 subscriptions per 100 people on the Current Path forecast.

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.

The benefits of Internet access are more easily attained through mobile telephones and smartphones, which are considerably cheaper than fixed-line solutions. In general, Africa has turned to mobile phone technology to bypass the high costs associated with implementing fixed-line infrastructure. Importantly, forecasts in IFs are limited due to the model considering subscription rates of 150 per 100 people as the saturation level.

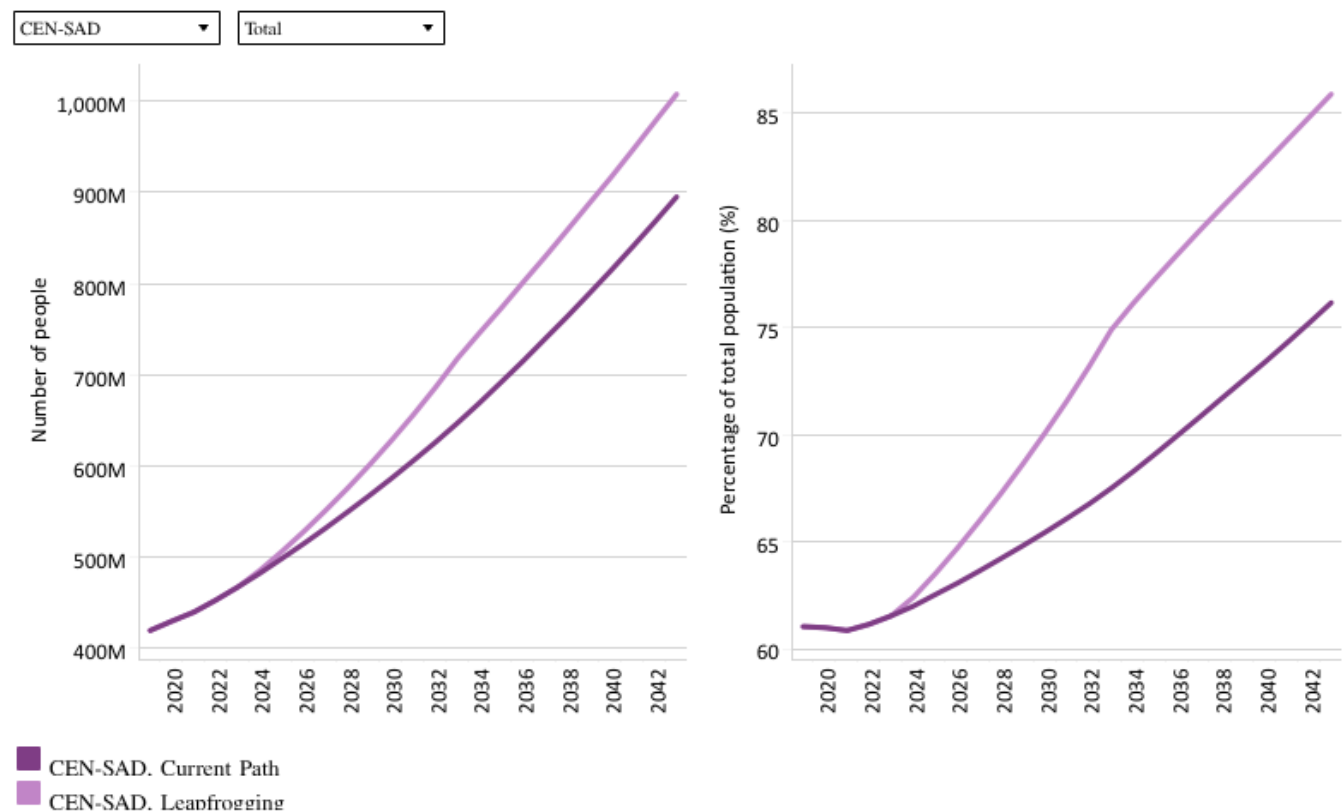
CEN-SAD's mobile subscriptions per 100 people are expected to rise from 43.6 in 2019 to 144.6 by 2043 in the Leapfrogging scenario, which is a marginal improvement from 143.4 in the Current Path forecast for the same year. The REC will maintain its gap to Africa's average between 2019 and 2043: in 2019, the difference was 3.1 subscriptions and by 2043 in the Leapfrogging scenario, the gap will be 2.8 compared to Africa's Current Path forecast.

Ghana had the most mobile subscriptions at 102.5 per 100 people in 2019, but in the Leapfrogging scenario by 2043, Libya will have the most subscriptions at 158.4 per 100 people. The effect of the scenario on subscriptions is to push most countries to the saturation point of 150 subscriptions per 100 people, meaning there will be little variance between

individual members by 2043. Eritrea however is an outlier, only reaching 89.5 subscriptions per 100 people by 2043 in the Leapfrogging scenario, although the country does come from a very low base of 5.9 subscriptions in 2019. Comoros comes from a lower level of 5.7 but reaches 138.2 subscriptions per 100 people by 2043 in the Leapfrogging scenario.

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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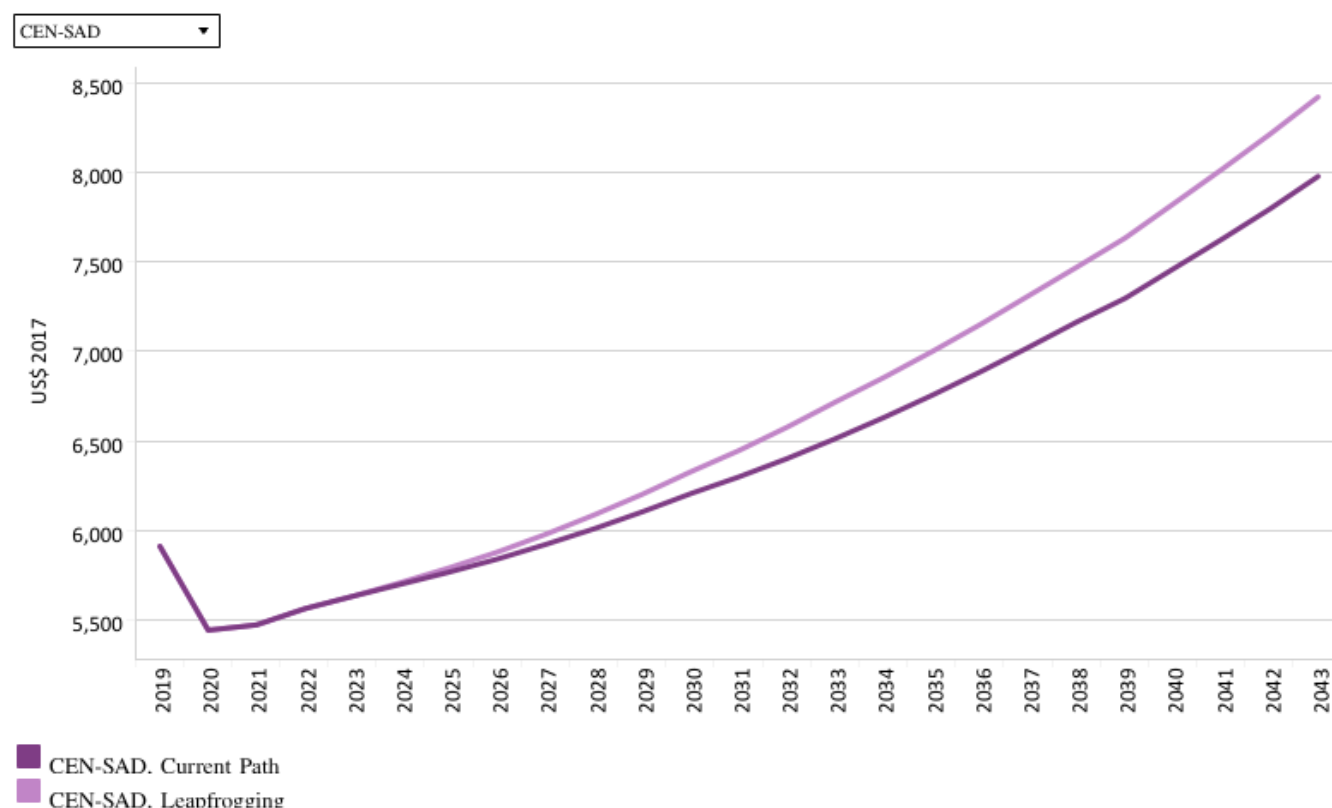
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Access to electricity means households can enjoy the benefits of clean cooking methods, lighting to study and it is needed for them to access the Internet. CEN-SAD's total electricity access rate was 61.1% in 2019, which is projected to increase to 85.9% in the Leapfrogging scenario by 2043, 9.7 percentage points higher than the Current Path forecast for the same year.

CEN-SAD's urban electricity access rate is much higher than its rural electricity access rate. In 2019, the gap was 30.8 percentage points and is expected to decrease to 22.5 percentage points by 2043 in the Current Path forecast. In the Leapfrogging scenario, however, the difference will narrow to 11.8 percentage points by 2043, a reduction of 10.7 percentage points.

The four North African countries of Tunisia, Morocco, Egypt and Libya were the only CEN-SAD members to have total electricity access rates above 90% in 2019, but in the Leapfrogging scenario, almost 50% of the REC's members will have access rates above that mark. Furthermore, only one country, Chad, will have an access rate below 50% by 2043, while in 2019, 14 countries had an access rate below 50%. The largest increase between the Current Path forecast and the Leapfrogging scenario in 2043 will be Guinea's increase, projected at 16.1 percentage points.

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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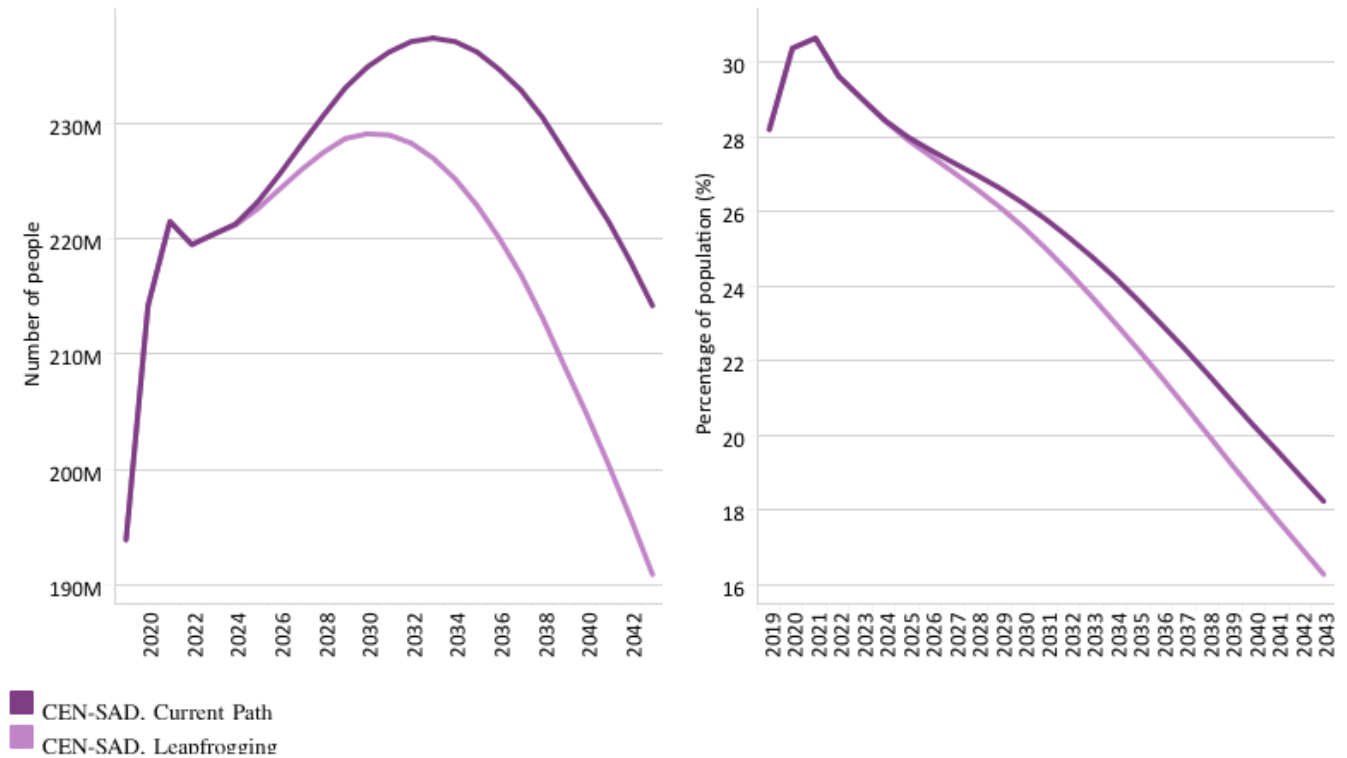
CEN-SAD's GDP per capita in 2043 will be the Leapfrogging scenario, US\$443 larger than the Current Path forecast in the same year. CEN-SAD's GDP per capita in the scenario is US\$1 264 above Africa's Current Path forecast average, and translates to a 42% improvement compared to 2019.

Somalia and Mali are projected to experience increases above 12% compared to their Current Path forecast for 2043, with both benefiting from substantial increases in total electricity access. Libya, Tunisia and Morocco will all see small increases in their GDP per capita, due mainly to their already high levels of electricity access.

Chart 38: Poverty in CP and Leapfrogging scenario, 2019–2043

Millions of people and % of total population

CEN-SAD \$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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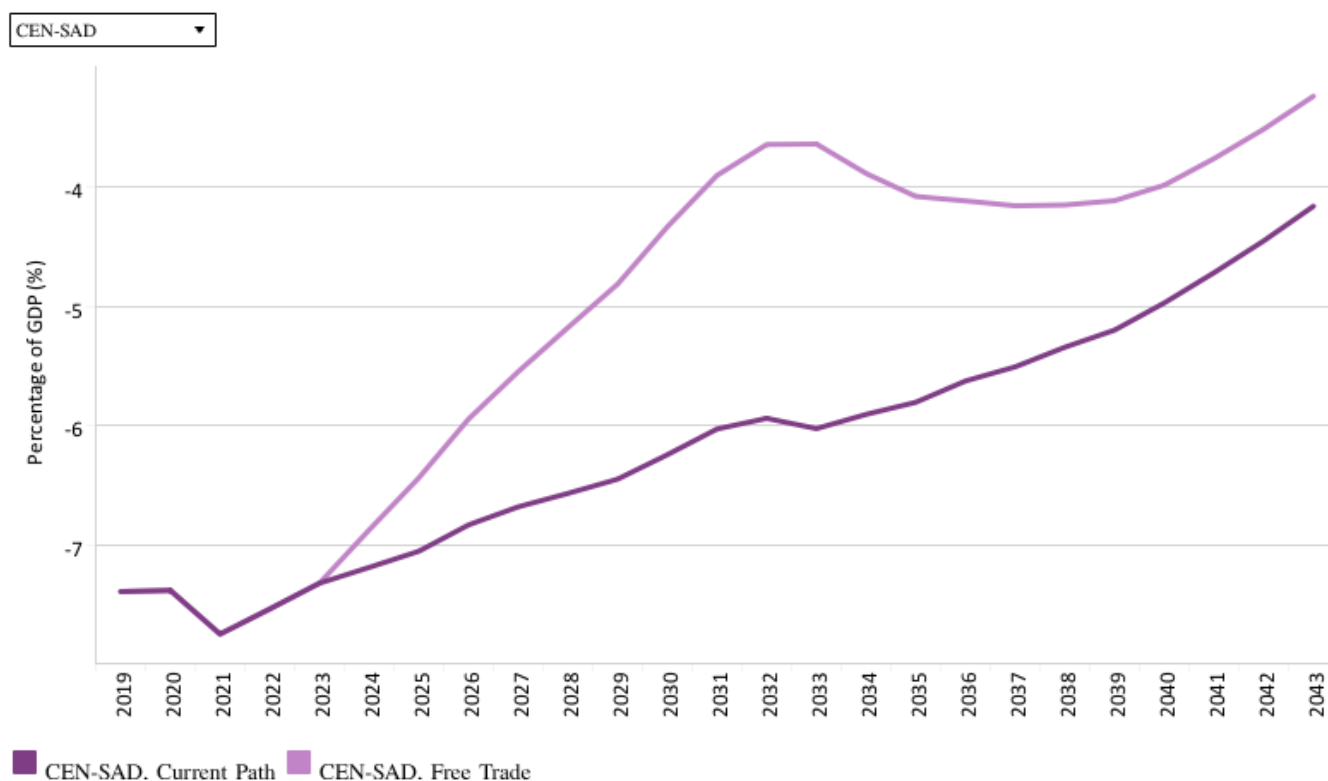
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In the Leapfrogging scenario, CEN-SAD's poverty rate will be 16.3% by 2043 — 2.2 percentage points lower than the Current Path forecast, a decline that equals 23.3 million fewer people being extremely poor. Out of all CEN-SAD's members, Mali performs particularly well, seeing a 5.4 percentage point reduction by 2043 compared to the Current Path forecast for the same year. Countries such as Tunisia and Morocco, where electricity access is already high, will see small decreases below half a percentage point.



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.

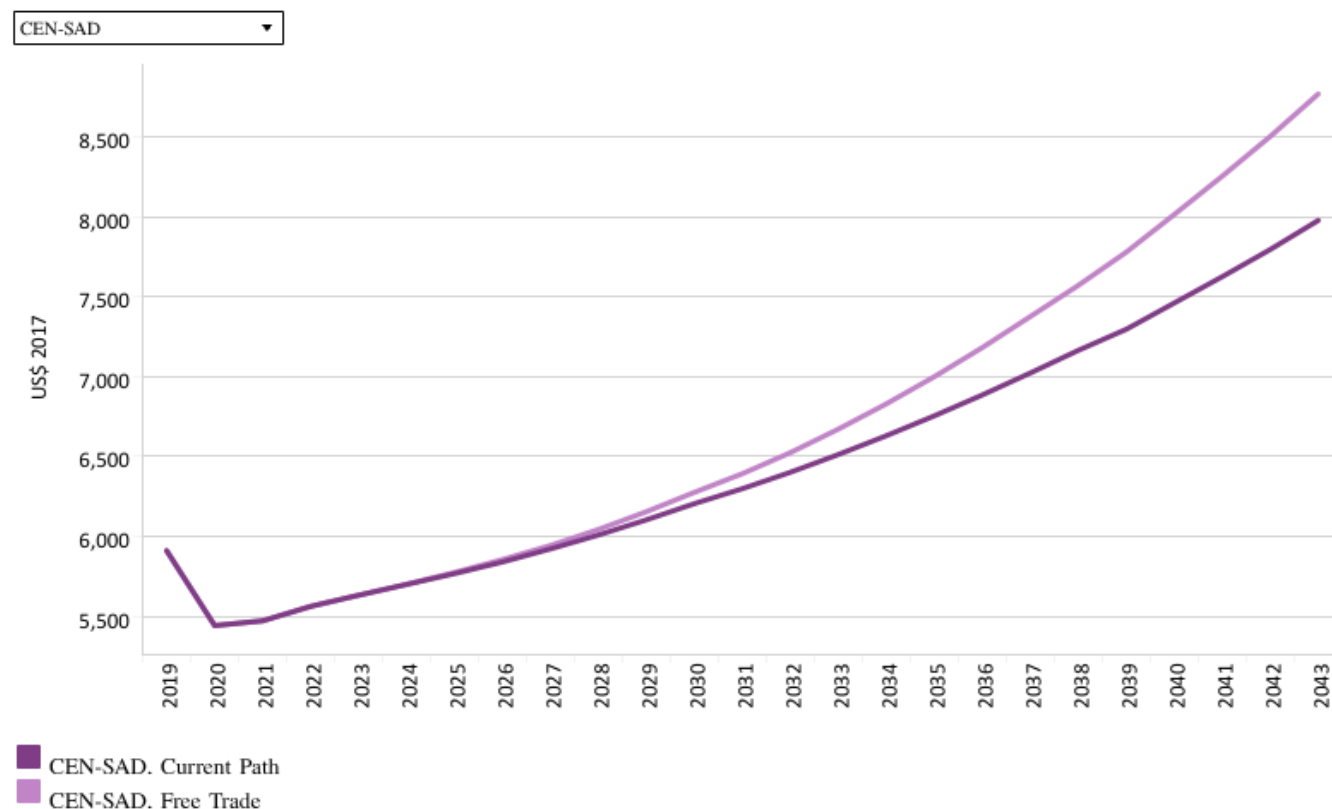
The Free Trade scenario spurs on CEN-SAD's exports and imports, and thus does not significantly affect the REC's trade balance: the trade deficit is projected to increase from 7.4% of GDP in 2019 to 3.3% by 2043 in the Free Trade scenario, 0.9 percentage lower than in the Current Path forecast. Exports however increase significantly, rising by 70.7% in 2043 compared to the Current Path forecast, while imports will rise by 60.3% in the Free Trade scenario. The lifting of non-trade barriers and reduction in tariffs will increase trade going in and out of countries, as consumers and businesses alike can more easily source inputs and goods at prices lower than local prices. The scenario will also increase manufacturing exports for the REC, rising by 6.1 percentage points in 2043 compared to the Current Path forecast.

The Free Trade scenario will see five countries, Libya, Côte d'Ivoire, Sudan, Eritrea and Nigeria, having trade surpluses by

2043, compared to three in the Current Path forecast. However, 24 countries will see their trade balances worsen in the Free Trade scenario, but all 29 countries will see an increase in their exports by 2043, with Djibouti experiencing a 23.1 percentage point increase compared to the Current Path forecast, the largest of all CEN-SAD's members.

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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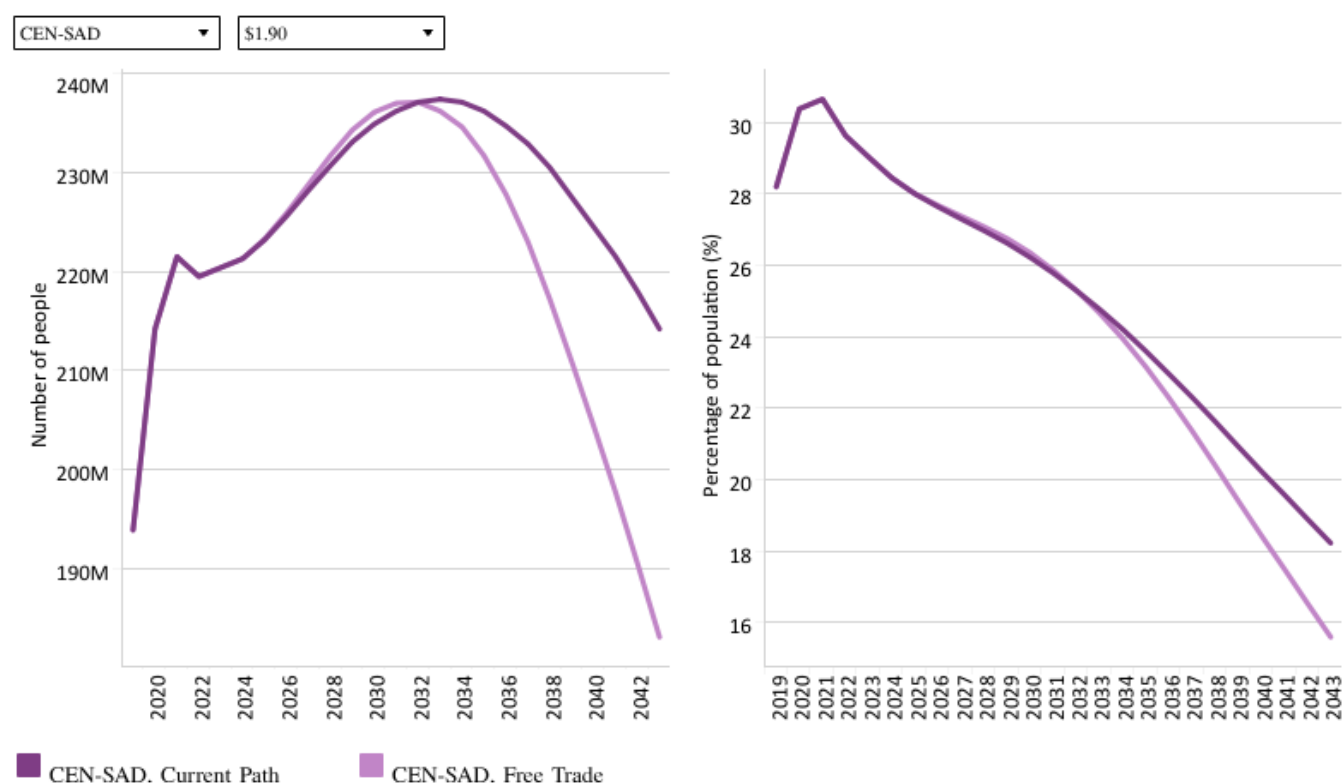
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Trade liberalisation increases productivity through technology diffusion and competition. Thus, the Free Trade scenario is particularly effective in spurring growth and income per capita. The Free Trade scenario increases CEN-SAD's GDP per capita the most out of all the scenarios discussed. In 2043, the CEN-SAD's GDP per capita in the Free Trade scenario was US\$791 larger than the Current Path forecast and US\$1 612 higher than Africa's Current Path forecast average.

São Tomé and Príncipe will benefit greatly from the increased trade that the scenario envisages under the AfCFTA, as its GDP per capita is expected to rise by 14.3% compared to the Current Path forecast for 2043. The liberalisation of trade boosts all CEN-SAD members' GDP per capita significantly, with only Libya expected to experience an increase below 5%.

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.

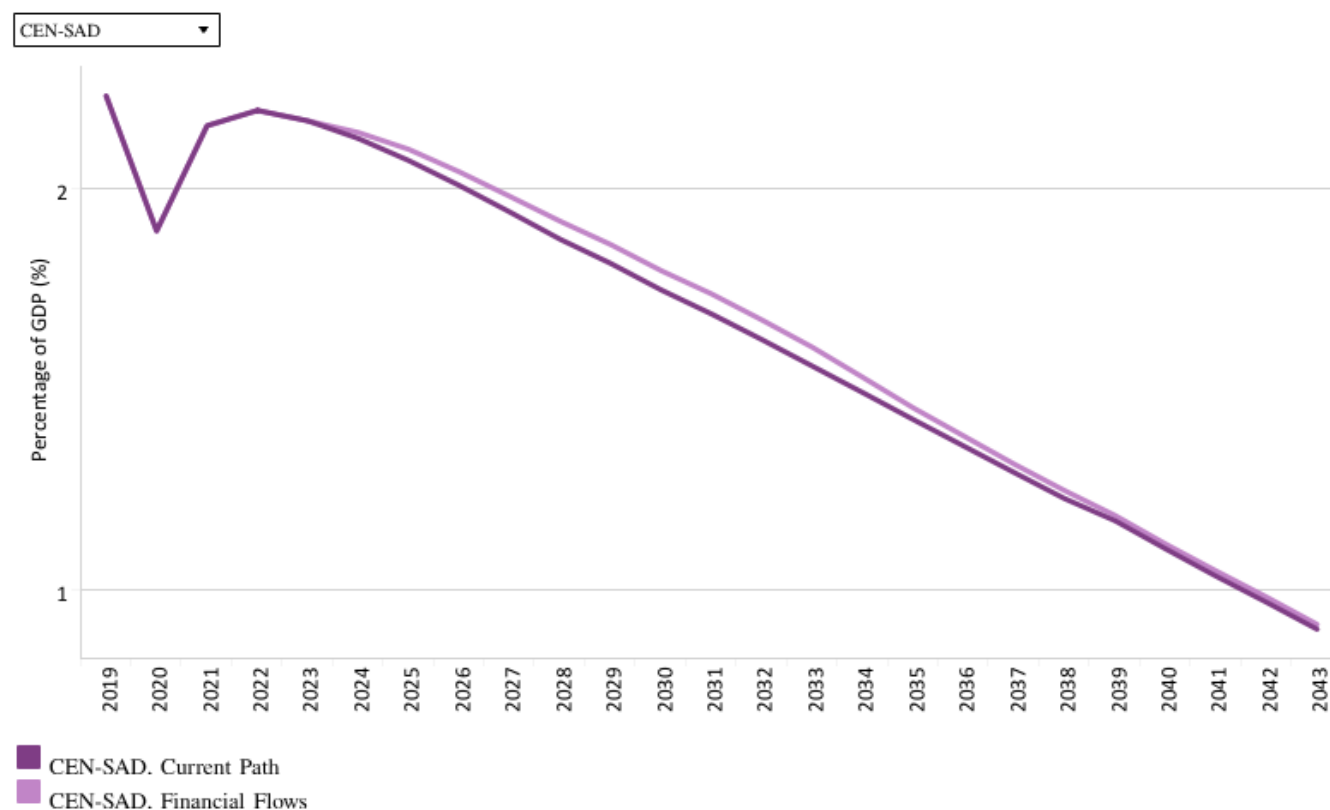
After increasing the poverty rate above the Current Path forecast between 2024 and 2032, the Free Trade scenario reduces CEN-SAD's poverty rate below the Current Path such that by 2043, the poverty rate in the Free Trade scenario is 2.6 percentage points lower than the Current Path forecast. This is equivalent to 31.1 million fewer people being extremely poor. By 2043, the Free Trade scenario will have the second greatest impact on poverty rates of all the scenarios discussed.

Sierra Leone will benefit the most from the increased trade the scenario envisages, seeing a 10 percentage point drop in its poverty rate by 2043 when compared to the Current Path forecast. CAR's poverty rate will only drop by 8.8 percentage points from 2019 to 2043 in the Free Trade scenario, a small decrease given its very high base of 73.9% in 2019.



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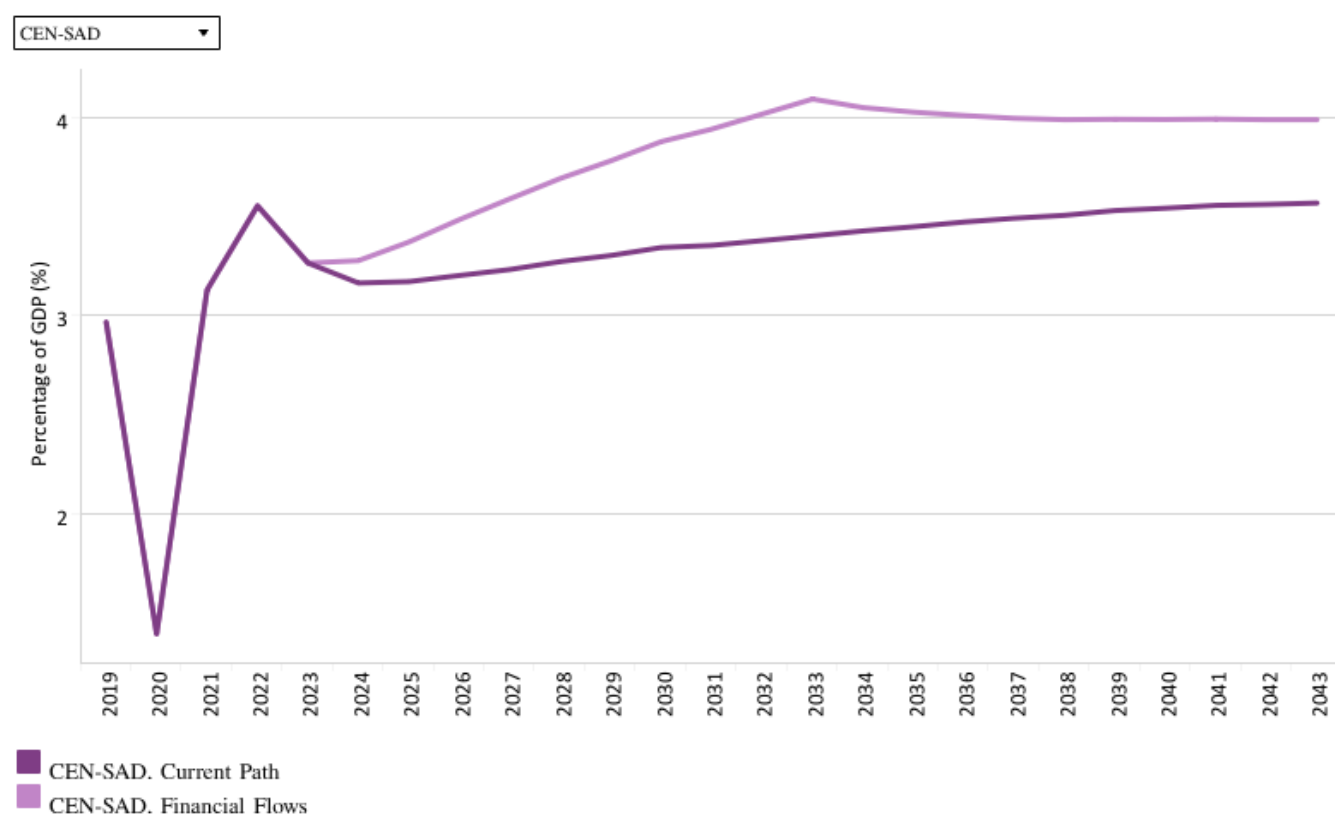
The Financial Flows scenario represents a reasonable but ambitious increase in worker remittances and aid flows to poor countries, and an increase in the stock of foreign direct investment (FDI) and additional portfolio investment inflows to middle-income countries. We also reduced outward financial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

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

CEN-SAD's dependence on foreign aid was comparable to Africa in 2019, with the REC receiving foreign aid equal to 2.2% of GDP compared to Africa's 2.4%. Aid flows to the CEN-SAD area declined to 1.9% of GDP in 2020 due to the COVID-19 pandemic and its associated economic crisis. In the Financial Flows scenario, by 2043, aid to CEN-SAD as a percentage of GDP will decline slightly to 0.9%, the same level as projected in the Current Path forecast. Africa's Current Path forecast for 2043 is 1.2%, similar to the REC's level. In absolute terms, foreign aid to CEN-SAD will be 4.7% higher by 2043 in the Financial Flows scenario compared to the Current Path forecast.

As African economies grow over the forecast horizon, foreign aid as a percentage of GDP is projected to decline, but in absolute terms aid is expected to grow and result in CEN-SAD's members still being dependent on foreign assistance to alleviate poverty. The Financial Flows scenario adds to this trend, increasing the value of aid in all but seven countries: São Tomé and Príncipe, Ghana, Tunisia, Libya, Côte d'Ivoire, Mauritania and Nigeria. As a percentage of GDP, only Sierra Leone is projected to see an increase above 1 percentage point by 2043 in the Financial Flows scenario.

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

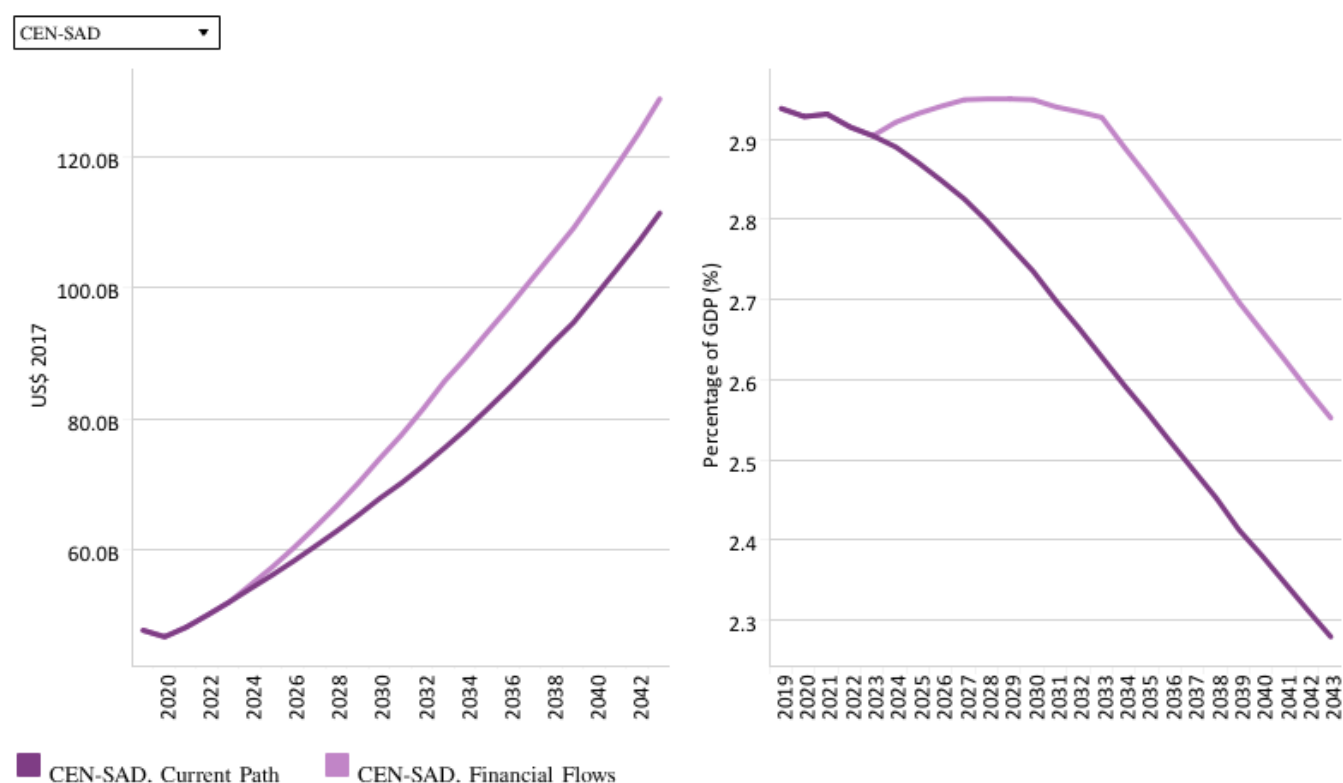
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Foreign direct investment is an effective way for African countries to finance their economic development, especially fixed, long-term investment, and increase their participation in the global economy. FDI flows to CEN-SAD, as a percentage of GDP, were just above Africa's average in 2019 at 3% and are expected to maintain the gap in the Financial Flows scenario at 0.2 percentage points by 2043. In absolute terms, the REC's FDI is projected to be 15.4% higher by 2043 in the Financial Flows scenario compared to the Current Path forecast.

The effect of the scenario is minimal across the board, with the highest increase between the Current Path forecast and the scenario by 2043 coming from Liberia at 2.2 percentage points. In absolute terms however, the increase is more impressive: in 2043, Liberia will see its FDI inflows rise by 27.6%, or US\$522 million, in the scenario compared to the Current Path forecast. Nigeria will experience the largest increase in absolute terms, at US\$7.6 billion by 2043.

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

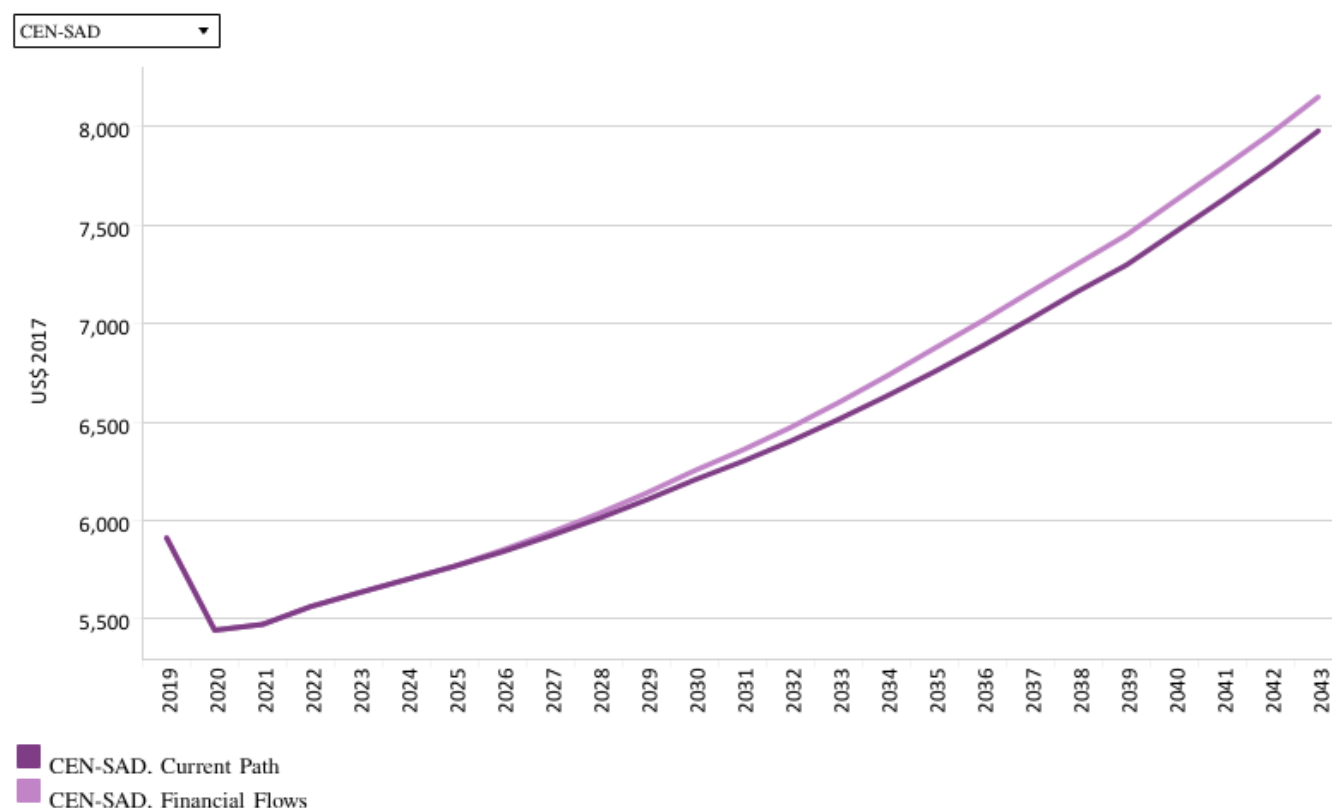
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CEN-SAD is a net receiver of remittances, equating to 2.9% of GDP in 2019, and dropping to 2.6% in 2043 in the Financial Flows scenario, 0.3 percentage points higher than in the Current Path forecast. In absolute terms, remittances will however rise over this period, from US\$47.6 billion in 2019 to US\$128.8 billion in 2043 — US\$17.4 billion more than in the Current Path forecast.

This increase is driven largely by Nigeria, which has a large diaspora, as the country will see its remittances rising from US\$22.4 billion in 2019 to US\$93.9 billion by 2043 in the Financial Flows scenario, US\$9.6 billion more than in the Current Path forecast. Percentage point wise, Comoros will see the largest increase between the scenario and the Current Path forecast, rising by 1 percentage point in 2043. At the other end of the spectrum, Libya, Côte d'Ivoire and Mauritania will see their outflow of remittances increase in 2043, with the largest increase of 82.9% coming from Libya.

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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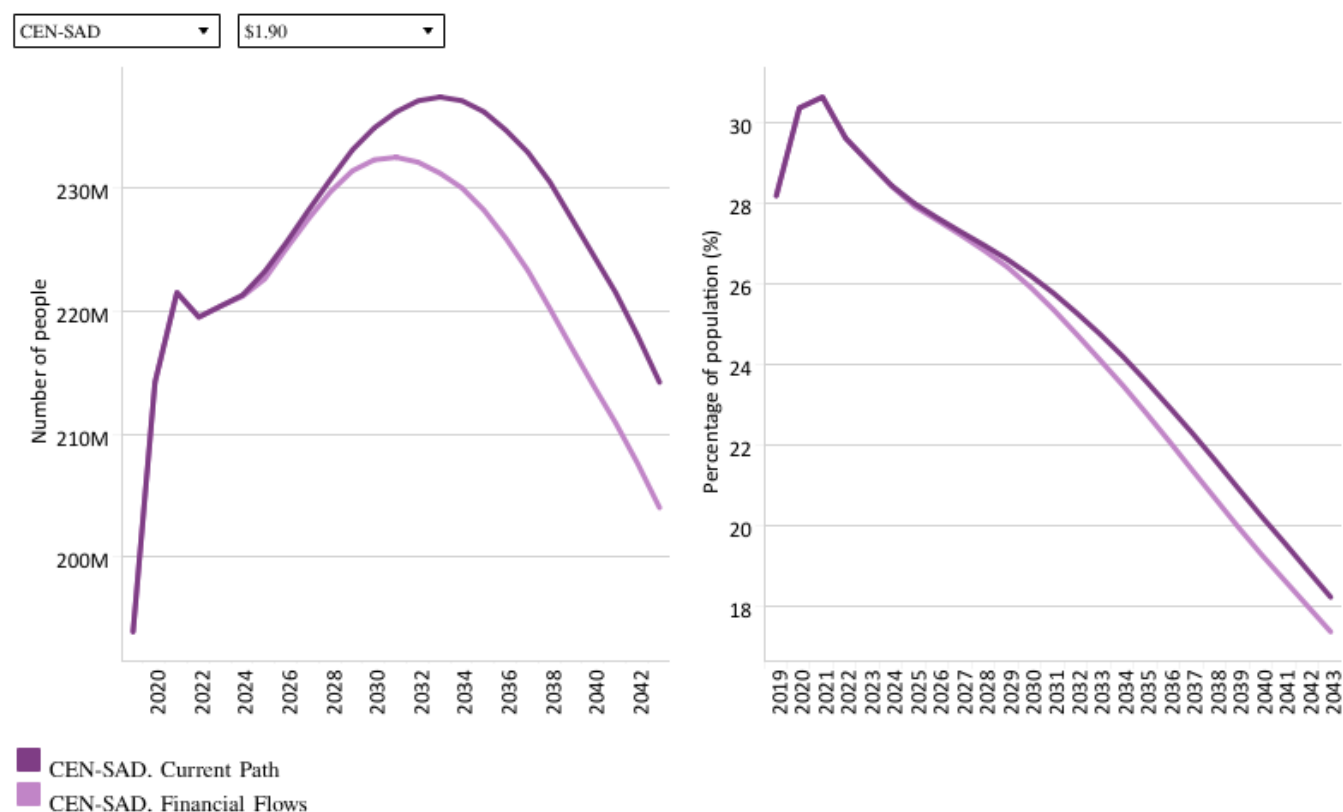
The Financial Flows scenario only marginally improves CEN-SAD's GDP per capita, raising it by US\$177 compared to the Current Path forecast for 2043. The small increase, however, widens the gap over Africa's Current Path forecast average to US\$993, up from US\$622 in 2019.

Liberia is the only country to significantly benefit from the scenario's interventions, seeing a 9.1% increase in its GDP per capita compared to its Current Path forecast for 2043. The outstanding performance is due to the Financial Flows scenario addressing the lack of financial investments needed to improve human capital and access the technology required to convert abundant natural resources into value-added goods. The rest of CEN-SAD's members will see increases between 1% and 3%; only Sierra Leone and Togo achieve an increase above 3%.

Overall, the Financial Flows scenario has a modest impact on CEN-SAD's GDP per capita. In contrast to FDI, external financial flows such as remittances and aid do not have a clear relationship with economic growth. Also, although it is diversifying into manufacturing and service sectors, FDI to CEN-SAD goes mainly to the extractives sector which has little connection with the other sectors of the economy.

Chart 46: Poverty in CP and Financial Flows 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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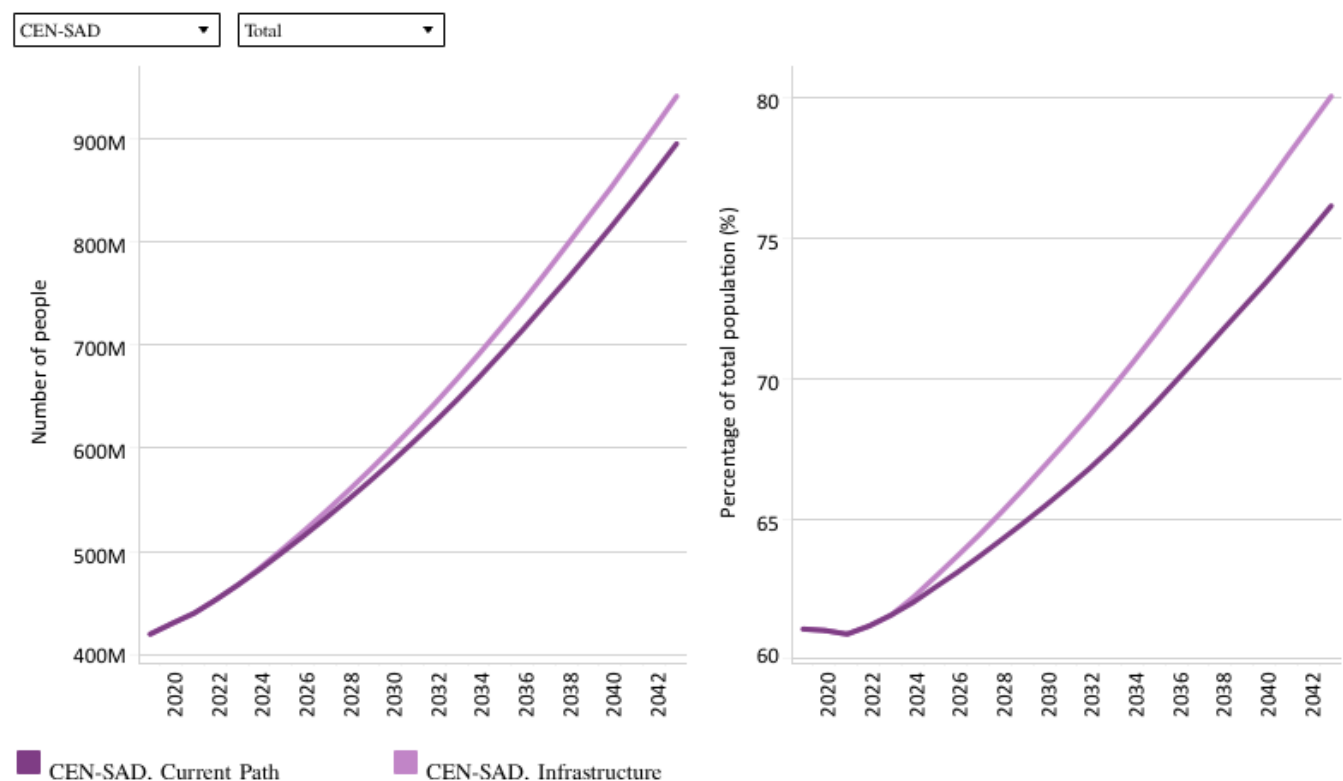
CEN-SAD's poverty rate will only decline by an extra 0.8 percentage points in the Financial Flows scenario compared to the Current Path forecast by 2043, a drop equal to 10.2 million people. The weak effect is driven by small decreases for most of CEN-SAD's members, except for Liberia. The country will see a substantial drop of 6.8 percentage points by 2043 when compared to the Current Path forecast, nearly double the amount of Sierra Leone in second place.



Infrastructure scenario

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

Millions of people and % of population



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.

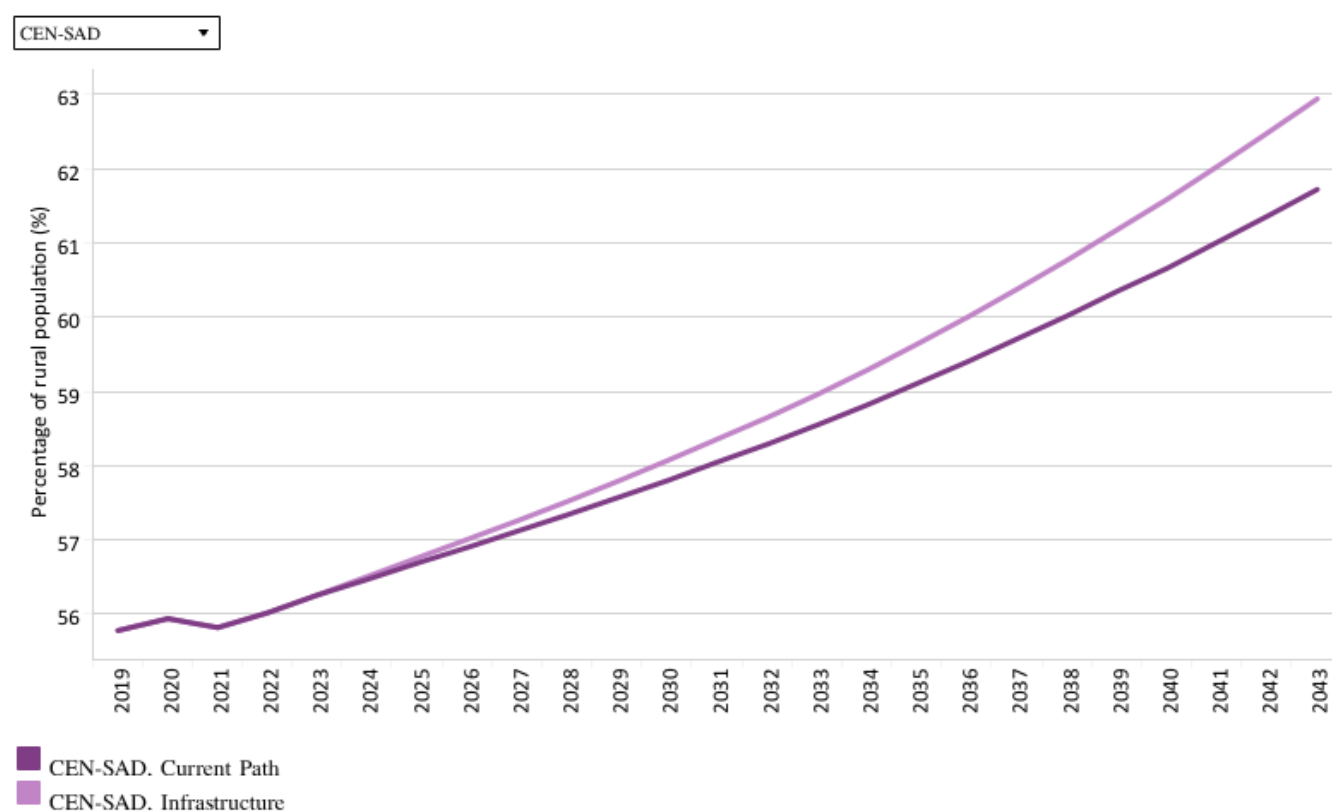
Electricity access is crucial for economic growth, enabling a country's population to access more advanced productive processes. It is needed too for high speed Internet connections and to improve healthcare outcomes. In the Infrastructure scenario, CEN-SAD's total electricity access is projected to rise from 61.1% in 2019 to 80.1% in 2043, 3.9 percentage points more than the Current Path forecast for that same year. Urban access will rise from 78.3% to 89.5%, while rural access will rise considerably from 47.5% to 70.1% between 2019 and 2043.

In the Infrastructure scenario, only nine countries in CEN-SAD are projected to have electricity access levels above 90% by 2043, and four countries will reach 100% access in 2043 — Tunisia, Morocco, Libya and Egypt. The gap between CEN-SAD's urban and rural electricity access rates drops from 30.8 percentage points in 2019 to 19.4 percentage points by 2043, 3.1 percentage points less than in the Current Path forecast.

CEN-SAD's rural access increases by 10 percentage points, but Chad will continue to struggle in the Infrastructure scenario, only reaching a rural electricity access rate of 18.8% by 2043, 1.9 percentage points higher than in the Current Path forecast.

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.

The Rural Access Index reflects how connected the rural population is to urban centres and thus how easily they can access larger markets and better services. CEN-SAD's score in the Rural Access Index was above Africa's average in 2019, with 55.8% of its rural population having reliable access to urban centres compared to Africa's 53%. The Infrastructure scenario builds on and magnifies the positive trend projected in the Current Path forecast, as the REC's Rural Access Index score reaches 62.9% in 2043, 1.2 percentage points above the Current Path forecast.

Wide disparities exist between countries within CEN-SAD: the REC's only upper middle-income country, Libya, had the highest score in 2019 at 90.7%, while Chad had a score of 16.1%, with Mali not far ahead on 17.5%. Access in Mali and Chad is projected to marginally improve in the Infrastructure scenario to 32.9% and 24.5%, respectively, while Libya would

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

Purchasing power parity

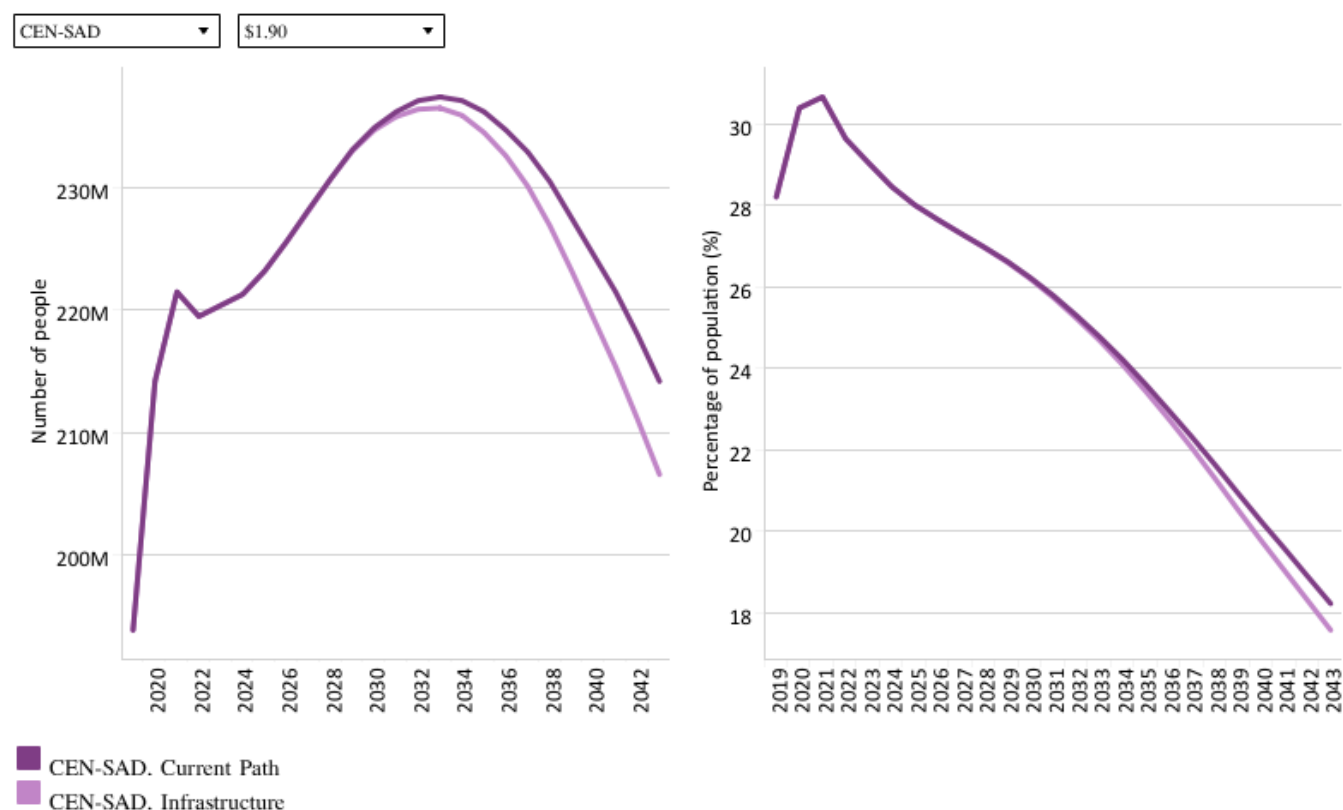




Several countries are expected to benefit substantially from the scenario's interventions: Guinea, Burkina Faso and Côte d'Ivoire will all see increases above 6% compared to their Current Path forecasts. Five countries, Kenya, Egypt, Libya, Ghana and Nigeria, will only see increases of 1%.

Chart 50: Poverty in CP and Infrastructure 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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The Infrastructure scenario has a limited effect on poverty, reducing CEN-SAD's average poverty rate at US\$1.90 by 0.6 percentage points compared to the Current Path forecast for 2043. The reduction equated to 7.6 million fewer people being extremely poor, and means the REC's poverty rate of 17.6% will be 3.3 percentage points below Africa's Current Path forecast average.

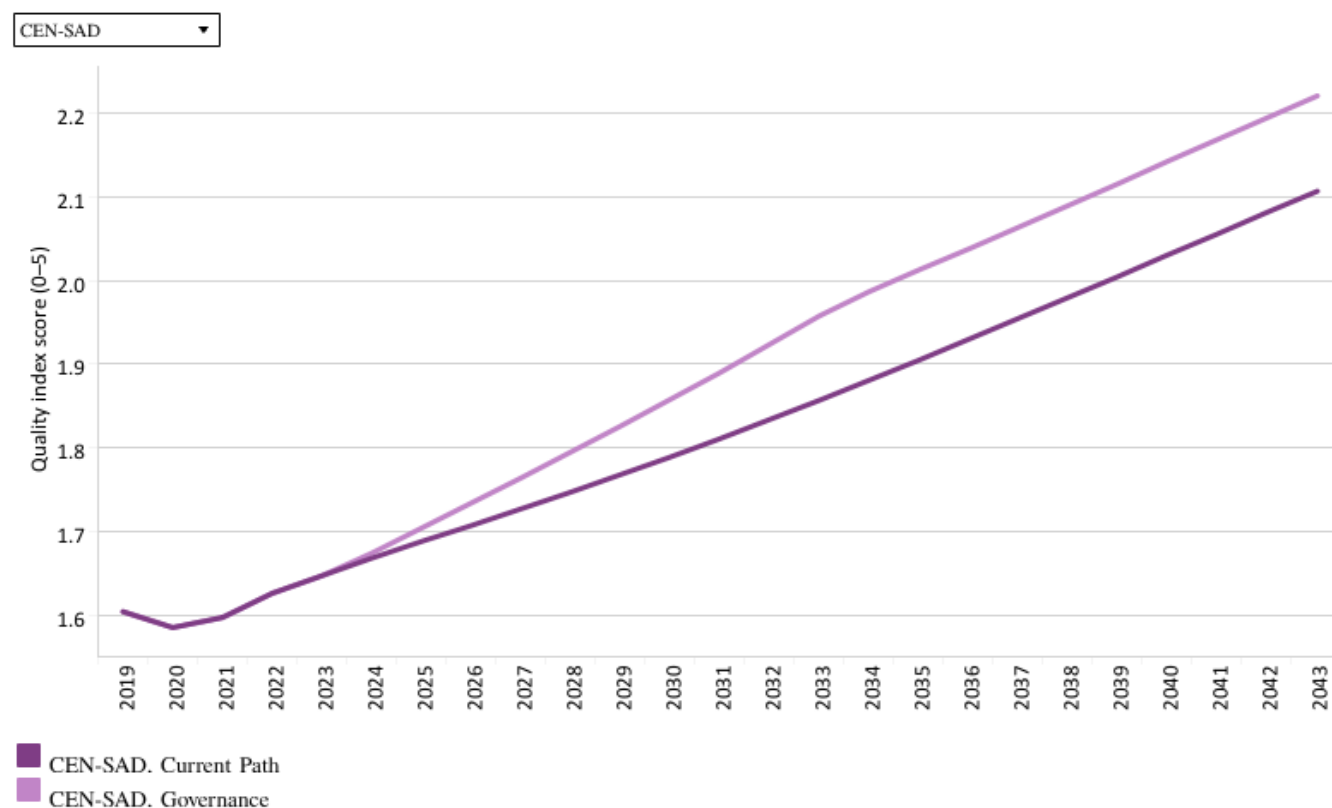
Côte d'Ivoire is expected to see the largest decline in its poverty rate at 3.4 percentage points at the US\$3.20 poverty line, while the North African states of Libya, Tunisia and Morocco see minimal reductions due their already low projected poverty levels in the Current Path forecast.



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.

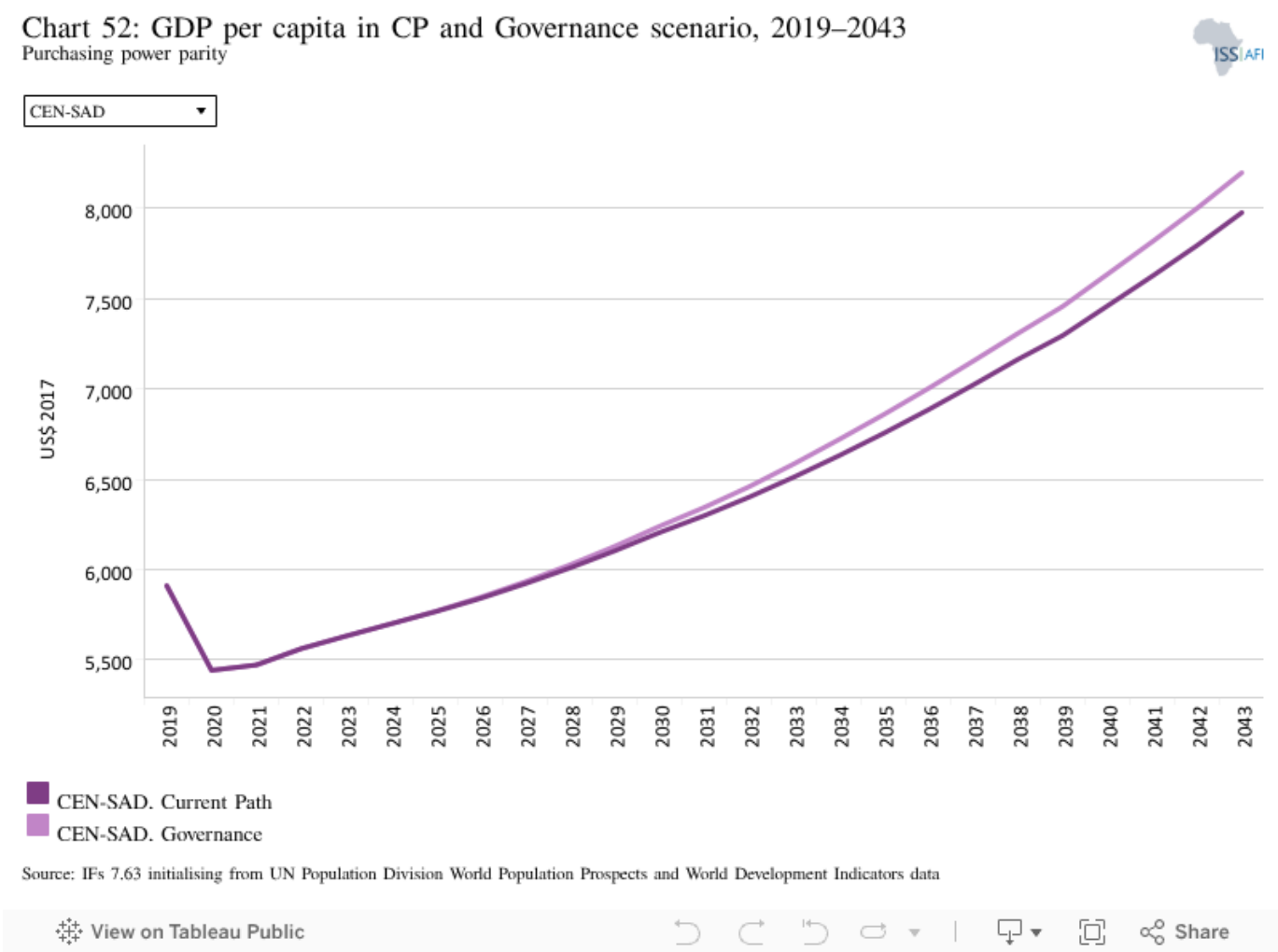
The intervention is explained [here](#) in the thematic part of the website.

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

Corruption in Africa has historically weighed heavily on growth and development, stymied investment and hampered service delivery. Increasing governments’ abilities to serve their citizens effectively and efficiently in a responsible manner remains a crucial factor in alleviating poverty on the continent. CEN-SAD’s score on the World Bank governance effectiveness index was below Africa’s score of 1.74 in 2019, with the REC scoring 1.6. The index is scored out of 5. CEN-SAD’s performance is expected to improve in the Governance scenario, reaching 2.2 by 2043, but this would only match Africa’s Current Path forecast for the same year.

The level of governance effectiveness varies considerably between CEN-SAD’s members: Cape Verde and Morocco are the only two countries who score more than 2.5, or 50%, on the index, while CAR and Somalia score less than a point, with 0.8 and 0.4, respectively. By 2043, the Governance scenario has helped increase the number of countries who achieve a score above 2.5 to 10, 4 more than there would have been in the Current Path forecast. The largest increases are expected to come from Eritrea and Sudan, who see a rise of 0.3 in 2043 compared to the Current Path forecast for the same year.



CEN-SAD’s average GDP per capita is expected to increase by US\$221 above its Current Path forecast for 2043 — a 3% rise that increases the REC’s average GDP per capita US\$1 042 above Africa’s Current Path forecast to US\$8 199 in the same year.

Mali would benefit the most from increased transparency and improved government effectiveness, experiencing a 4.3% increase in its GDP per capita for 2043 compared to the Current Path forecast. Libya and Cape Verde would both see increases of just 1%.

Chart 53: Poverty in CP and Governance 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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The Governance scenario reduces CEN-SAD's poverty by 0.7 percentage points compared to the Current Path forecast for 2043. This equates to 9 million fewer poor people in the Governance scenario than in the Current Path forecast. The poverty rate in the Governance scenario in 2043 is more than 10 percentage points lower than its level of 28.2% in 2019.

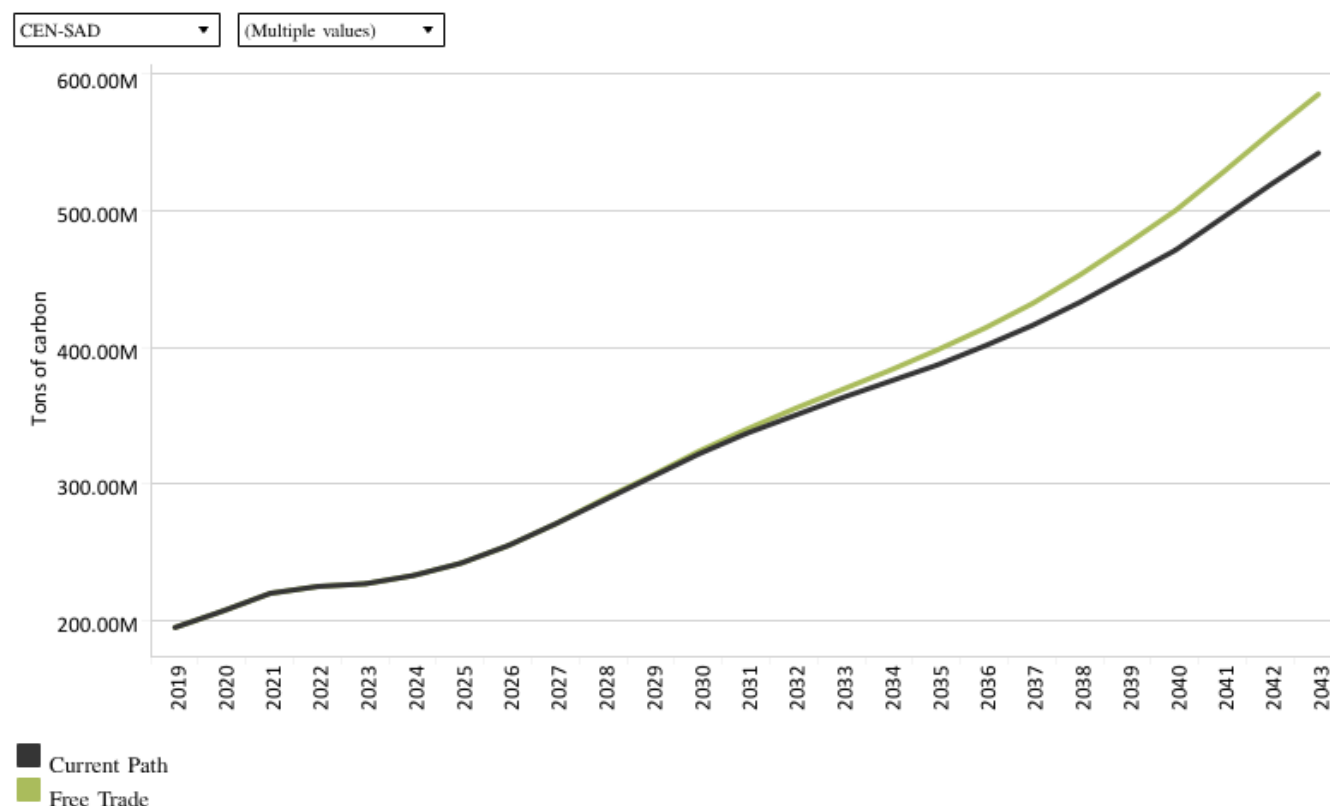
Mali would see the largest reduction in its poverty rate, in line with the effect that the scenario has on average incomes. The country will see a 2.3 percentage point drop in its poverty rate — a reduction equating to 900 000 fewer people being extremely poor at the US\$1.90 poverty line. As before, the North African states of Libya, Tunisia and Morocco are expected to see large decreases in poverty in the Current Path forecast, and thus the scenario has little impact on their poverty rates.



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 CEN-SAD and the 11 scenarios. Note that IFs uses carbon equivalents rather than CO₂ equivalents.

All the scenarios increase economic growth and thus lead to increased carbon emissions for CEN-SAD. In 2043, the Free Trade scenario will increase carbon emissions the most compared to the Current Path forecast, followed by the Manufacturing/Transfers and Agriculture scenarios.

The Demographic scenario causes carbon emissions to decrease due to a smaller total population by 2043. The reduction of population growth reduces population pressure on the utilisation of resources and hence minimises environmental degradation.

The Leapfrogging scenario is unique in that it increases GDP per capita the third most out of all scenarios in 2043 but ranks second from bottom in terms of increasing carbon emissions. The scenario highlights the potential benefits of adopting renewable energy generation and increased access to fixed and mobile broadband, both for the environment and average incomes.

Individually, the Free Trade scenario leads to the most emissions for most CEN-SAD members, although Sierra Leone will emit the most in the Leapfrogging scenario and Egypt in the Manufacturing/Transfers scenario by 2043. The single largest

increase will stem from the Free Trade scenario's impact on Nigeria, with a rise of 19.7 million tons of carbon in 2043 compared to the Current Path forecast.

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