Nigeria
Scenario analysis: pathways for a prosperous Nigeria

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Introduction

Chart 27: Intervention clusters/Scenario components

This section asks the following question: What can be done to improve Nigeria's current development trajectory to propel the country onto a path of prosperity? We attempt to answer this question by designing scenarios and simulating their impact.

The scenario components presented in Chart 27 focus on the areas where Nigeria is performing poorly based on the preceding Current Path analysis: governance and security, agriculture, human capital formation, basic infrastructure, and economic and export diversification. These scenario components are subsequently combined into a single scenario called the Super Nigeria scenario, which simulates a broad policy push to propel the country onto a path of shared prosperity.
In line with the second ten-year implementation plan of the African Union's Agenda 2063, a long-term vision for the future of Africa, the interventions within each cluster commence in 2024 and present a subsequent ten-year push to 2033, with the improvements maintained to 2050 (Nigeria Agenda 2050). The various interventions are based on a careful calibration of what is realistically possible. This is based on comparisons of what has been achieved by countries that are at similar levels of development to Nigeria through a process of benchmarking (see Annex C).

The interventions are an optimistic view on the development trajectory of Nigeria’s future. The objective is to highlight policy interventions needed to propel Nigeria into a prosperous future. Components of a worst-case scenario for Nigeria include the possibility of a descent into widespread warlordism, intensified ethnic and religious strife, herder and farmer clashes, the breakup of Nigeria into smaller countries or a domestic military takeover, as experienced repeatedly by the country over the period 1960–1999.

The worst-case scenario could inform preparedness for national emergencies; however, we prefer to be optimistic about the future of Nigeria and hence focus on how to improve the country’s long-term development prospects.
This section briefly describes a set of interventions modelled within the IFs modelling platform to emulate improved governance, security and stability in Nigeria. Bad governance and rising insecurity are threatening the country's development prospects. For this reason, the scenario increases governance effectiveness to provide citizens with better social services and hence improve the dire social service delivery outcomes in the country.

This is underpinned by improvement in government capacity through efforts to enhance domestic revenue mobilisation. Thus, the intervention increases taxes on skilled workers as a proxy for government efforts to make wealthy households pay their fair share of taxes. Also, the government intensifies its efforts to reduce corruption, which is a key obstacle preventing Nigeria from realising its human and economic potential.

In this scenario component, the Nigerian government aggressively pushes to improve social inclusion through improved democracy, gender empowerment and support for the poorest and most vulnerable households through well-targeted social grant programmes. Nigeria has one of the lowest levels of public spending on social protection.

Improvement in government effectiveness, accountability and a reduction in corruption are accompanied by efforts to address the multiple overlapping security crises and to improve stability. Thus, the scenario reduces the governance security risk from societal violence (conflict and terror) and separatism. The benchmarking for these interventions is presented in Annex C.

In this scenario component, the annual government revenue is nearly US$167 billion more than the Current Path forecast by 2050. Expenditures on healthcare, education and infrastructure all increase, including military expenditure, which is
US$13.4 billion more in 2050 than the amount forecast on the Current Path for that year. This is expected as the country needs to address the equipment shortfalls in the defence and security sector to tackle rising security threats such as terrorism, kidnapping, assassinations, armed robbery and oil pipeline vandalism.

If this scenario were implemented, Nigeria could experience large gains in economic growth and poverty reduction. Indeed, the size of the Nigerian economy would be US$738 billion larger in 2050 than the projected value on the Current Path. The average Nigerian is also expected to gain US$1,816 in GDP per capita (PPP) in 2050 compared to the Current Path. Also, there will be 26.5 million fewer Nigerians surviving on less than US$1.90 per day in 2050 compared with the Current Path forecast.

This is equivalent to a monetary poverty rate of 16.3% against 22.1% on the Current Path. Good governance and security cut across all the sectors; they create incentive and confidence for investment and innovation. Good governance is crucial for efficient use of public funds for development and improving the well-being of the population. According to an economist at the World Bank, ‘When governance is good, public investments crowd in private investment by providing the energy, roads, logistics and communications links necessary for firms to function productively.’ [1]
Demographics and human capital

Chart 29: Demographics and Human capital scenario

As revealed by the Current Path analysis, Nigeria has a rapidly growing population as well as poor human capital outcomes. Nigeria is forecast to have a population of more than 450 million by 2050. This combination of high population growth and low human capital development is a serious impediment to Nigeria’s socio-economic advancement. Human capital is one of the key drivers of productivity and prosperity. A decline in fertility reduces the size of the below-15 dependency age group and, therefore, reduces the demand for education and healthcare services.

Thus, reducing fertility increases per capita availability of resources for investment in education and health, even in the absence of real increases in the allocation of government resources for these sectors. Therefore, in this scenario, we proceed on the premise that the Nigerian federal government has recognised the necessity to tackle the growing population challenge and the importance of human capital formation for the social and economic well-being of the country, and therefore has taken bold actions to address years of underinvestment in human capital. For these reasons, the scenario includes three intervention groupings aimed at setting Nigeria on a different demographic trajectory and transitioning the education and health systems towards a path of long-term inclusive growth and development.

The first policy intervention is an aggressive push towards modern contraceptive use to reduce the fertility rate. Modern contraceptive prevalence in Nigeria is well below the average of its African and global income peers, leaving room for improvement. The second group of interventions improves health outcomes in Nigeria. As shown by the Current Path analysis, Nigeria has some of the worst healthcare statistics in the world. In this cluster, we proceed on the premise that the federal government, with the assistance of development partners, has improved the accessibility, affordability and quality of healthcare and has rolled out its National Health Insurance Scheme across the entire country.

The interventions therefore simulate a series of reductions in the incidence of communicable and non-communicable diseases. These include a reduction in malaria and HIV prevalence as well as in respiratory infections. It also reduces infant
and maternal mortality. About 44% of children under five years of age suffer from chronic malnutrition in Nigeria. [2] This is equivalent to about 14.5 million Nigerian children at risk of being stunted or not developing to their full potential. Against this backdrop, the scenario improves nutritional outcomes by reducing severe and acute malnutrition (SAM).

The final group of interventions in this scenario represents reasonable improvements in the quantity and quality of education in Nigeria. It improves the throughput along the entire educational funnel. Specifically, it increases primary net intake for males and females to reduce the high number of out-of-school children. It improves graduation rates at lower secondary and upper secondary levels as well as an improved tertiary intake. Also, the proportion of STEM students and the share of students in TVET are increased to address the skills shortage in the country. Finally, the intervention focuses on education quality, and reasonable quality improvements are modelled at the primary and secondary levels.

In this scenario, 62% of fertile women use modern contraception by 2050, on a par with the projected average for African lower middle-income countries in the same year. As a result, Nigeria is set on a different demographic path, where it converges with the average of its African income peers by 2050. The fertility rate declines from 5.4 children per woman in 2020 to 2.4 by 2050, a nearly 42% decrease compared to the Current Path forecast of 3.4 births per woman. If the Demographic and Human Capital scenario were implemented, Nigeria could accelerate the population transition to reap the demographic dividend by 2048 instead of 2060 on the Current Path. Generally, the demographic dividend materialises when a country reaches a ratio of at least 1.7 people of working age for each dependant.

In this scenario, Nigeria benefits from substantial economic growth and poverty reduction. GDP surpasses the Current Path forecast by US$307.5 billion in 2050 while the GDP per capita (PPP) is about US$1,468 more than the Current Path forecast for the same year. Also, in this scenario, there are more than 30 million fewer Nigerians living in extreme poverty (less than US$1.90 per day) in 2050, equivalent to a poverty rate of 16.7% instead of 22.1% for the Current Path forecast in the same year. This intervention cluster shows that controlling the population growth and investing in human capital could enhance economic and human development in Nigeria.
Agricultural Revolution

Chart 30: Agricultural Revolution scenario

Adaption of climate-smart technologies
Increase productivity / crop yields
Reduce pre-harvest and post-harvest losses
Increase irrigation use
Increase food access / calories per capita

Agriculture

Agriculture is the source of livelihood for millions of Nigerians. However, as revealed by the Current Path analysis, the sector faces several challenges that negatively impact on productivity. Investing in agriculture can ensure food security, reduce resource conflicts, provide jobs, increase income and pave the way for economic diversification through agriprocessing. For these reasons, we proceed on the premise that the Nigerian government has acknowledged the importance of this sector, and hence that it makes an aggressive push to revive and modernise it.

Therefore, the interventions in this scenario component constitute a coordinated push to unlock Nigeria’s agricultural potential. The interventions reflect an aggressive but reasonable improvement in agricultural productivity (average yields) as a result of the adoption of modern and climate-smart agriculture technologies, improved seedlings, and increased fertiliser and pesticide use. Likewise, land under irrigation is increased to reduce the vulnerability of rainfed crops.

The scenario equally reduces post-harvest losses through improved storage facilities and improves market access. We also assume that the government reforms the land tenure system to address conflicts and disputes around land and other natural resource use more quickly and efficiently, and in a way that unlocks credit. Feeding the largest population in Africa is a mammoth task, one that requires significant attention and investment. While the sector can benefit from increased export revenues it should focus its attention first on establishing food security. The intervention therefore increases calorie per capita as a proxy for improvements in food access.

In the Nigerian Agricultural Revolution scenario, Nigeria will produce about 182 million metric tons of additional food (crops, meat and fish) in 2050 compared to the Current Path forecast. The scenario improves food access and consumption in Nigeria, as available calorie per capita per day from crops, fish and meat increases from 2,547 in 2019 to 3,286 in 2050. As a result, the share of children suffering from malnutrition declines by nearly 1.4 million or 2.3 percentage points in 2050 relative to the Current Path forecast.
Also, the scenario lifts an additional 19.1 million Nigerians out of extreme poverty by 2050 compared to the Current Path. The size of the Nigerian economy gets a boost; it is about US$187.2 billion larger than the size forecast on the Current Path by 2050 while the GDP per capita at PPP is US$431 larger than it would otherwise be on the Current Path in the same year.
The weak infrastructure base in Nigeria constitutes a major constraint for both large and small businesses and has long been a bottleneck for economic growth. Actions are, however, being undertaken to address the situation, as shown by the Current Path analysis. However, without additional intervention, the current pace of progress will not be fast enough to advance human and economic development in the country. Therefore, we proceed on the premise that the Nigerian government will accelerate the implementation of its ambitious NIIMP that aims to enhance infrastructure development over the next 30 years.

The first group of interventions in the Basic Infrastructure scenario component simulates aggressive but reasonable improvements in energy access. These consist of increasing electricity generation capacity, including through greater use of renewable energy, and reducing electricity transmission and distribution losses. The intervention also increases the share of the population with access to electricity in both rural and urban areas.

The second group of interventions represents an effort to improve access to transport infrastructure, which plays a critical role in economic growth, by reducing transportation costs of goods and services and improving productivity. The scenario therefore increases total road length as well as the share of paved roads.

The third group of interventions in this scenario represents a concerted effort to expand broadband coverage. The digital economy has the potential to create jobs and transform millions of Nigerians' lives. Increasing broadband penetration can help Nigeria leapfrog some of the constraints of traditional infrastructure. Therefore, we proceed on the premise that the Nigerian government has recognised the benefits of increased broadband penetration and envisions an aggressive push on broadband access across the country. The intervention thus models aggressive but reasonable improvements in mobile and fixed broadband access.
Poor access to clean water and improved sanitation constitutes one of the key underlying factors of the high morbidity and mortality rates among children under five in Nigeria. Against this backdrop, the final set of interventions in the Basic Infrastructure scenario represents an effort to boost access to safe water and improved sanitation across the country.

If this scenario were implemented, the proportion of households using traditional cookstoves could decline from 69.4% in 2019 to about 12% in 2050. Improvement in energy provision increases the use of modern cookstoves, which reduces deforestation and respiratory infections. In terms of economic and human development, the size of the Nigerian economy would be US$342.6 billion larger in 2050 than the projected value on the Current Path. The average Nigerian is also expected to gain US$844 income per annum (PPP) in 2050 compared to the Current Path for that year. Also, there are 11.8 million fewer Nigerians living in extreme poverty in 2050 compared with the Current Path forecast. This translates to a poverty rate of 19.6% against 22.1% on the Current Path.
Economic and export diversification

Chart 32: Economic and export diversification scenario

Crude oil exports continue to be the backbone of Nigeria’s economy, putting the country at the mercy of volatile commodity prices. It also leads to jobless growth as the oil and gas industry is generally capital-intensive. In addition, it contributes to increased carbon emissions and severe environmental degradation, eroding the natural capital of the country. Currently the manufacturing sector in Nigeria is weak and unable to play a leading role in economic growth and development. As noted by economist Nicolas Kaldor, manufacturing is the engine of economic growth (Kaldor’s engine of growth hypothesis). [3] It has back and forward linkages with other sectors and transforms the productivity structures across the economy.

Thus, without a robust manufacturing sector, sustained growth cannot be achieved and sufficient jobs cannot be created to reduce inequality and poverty in Nigeria. This scenario therefore models the impact of a concerted effort by the Nigerian authorities to unleash the potential of the non-oil sector with particular focus on manufacturing and export diversification.

The first cluster of interventions improves business regulation and economic freedom to promote SME-driven industrialisation. SMEs are the engine of job creation in Nigeria; reducing bureaucracy and simplifying administrative procedures and formalities make it easier for them to do business and grow. Improvement in economic freedom is also used as a proxy for strong economic institutions. Well-functioning economic institutions such as good enforcement of property rights can set the stage for innovation and industrial revolution.

The second cluster of interventions increases domestic and foreign investment and labour participation rates and improves macroeconomic stability. Attracting manufacturing FDI can help Nigeria develop its manufacturing base and diversify its exports. Export-oriented manufacturing FDI played an important role in the sophistication of Malaysian exports. [4] However, there are limits to how far foreign manufacturing firms can drive a country’s industrialisation. Thus,
the scenario increases domestic investment to model government efforts to promote ‘national champions’ in the manufacturing sector. Macroeconomic stability also matters for industrialisation. High domestic inflation, for instance, can erode the competitive edge of exporting firms. An increase in remittances is used as a proxy for macroeconomic stability in this scenario.

Nigeria is the largest recipient of remittances in sub-Saharan Africa. Remittances are a more stable source of external finance than FDI and portfolio investment. Significant remittance inflows help boost foreign reserves and reduce pressure on the exchange rate, thereby stabilising the inflation rate. Likewise, the labour participation rate is increased as a proxy for the promotion of labour-intensive manufacturing to boost job creation in the country.

The final cluster of interventions models government efforts to boost research and development (R&D) activities and promote export diversification, especially manufacturing and services/ICT goods. R&D and trade promotion are some of the key policy interventions that nurtured manufacturing in Malaysia. Technology upgrading through R&D is crucial for a robust manufacturing sector. It stimulates innovation, increases productivity and improves the quality of products. Also, local industries thrive when they participate in export markets and compete globally, as it provides incentives for firms to innovate, potentially resulting in high productivity.

In the Economic and Export Diversification scenario component, manufacturing exports increase from 2% of GDP in 2019 to 21.2% by 2050. The scenario has substantial impacts on the Nigerian economy and human development. The Nigerian economy grows by US$1.4 trillion (or 46%), larger than what it would be on the Current Path in 2050. The average Nigerian would also have an income that is US$3,551 (PPP) higher than the Current Path, while more than 33 million fewer Nigerians would live in extreme poverty in 2050 compared to the Current Path forecast.

The labour force in the manufacturing sector is more than three million larger in 2050 than what it would be on the Current Path, implying that the materialisation of this scenario would lead to more job creation. Also, the value added of the manufacturing sector is US$347 billion above the Current Path forecast in the same year.
Nigeria gets a boost to its GDP in all the scenarios. As shown in Chart 33, the size of the Nigerian economy in each scenario is larger than on the Current Path. Nigeria’s economy stands to benefit most from the interventions in the Economic and Export Diversification scenario. The Governance and Security scenario has the second most significant impact on GDP expansion. The Agricultural Revolution, Basic Infrastructure, and Demographics and Human Capital scenarios are neck and neck in expanding Nigeria’s GDP. However, agriculture has the biggest impact on GDP in the short term (until 2030) (Chart 33).
Similarly, all the interventions push average income above the Current Path, with the most significant improvement from the Economic and Export Diversification scenario (Chart 34). Despite the GDP size in the Demographics and Human Capital scenario being smaller than in the Basic Infrastructure scenario (Chart 33), it has the third most significant impact on GDP per capita after the Economic and Export Diversification and Governance and Security scenarios. This means that Nigeria could mechanically improve some of its development indicators by reducing fertility.
Chart 35 shows that all the interventions contribute to poverty reduction in Nigeria. The poverty rates in the scenarios in 2050 range from 15% in the Economic and Export Diversification scenario, 16% in the Governance and Security scenario, 17% in the Demographics and Human Capital scenario, 18% in the Agricultural Revolution scenario to 19.6% in the Basic Infrastructure scenario, against 22% on the Current Path. However, the number of poor people in Nigeria increases in the first few years of each intervention cluster before declining due to the lasting scars of the COVID-19 crisis and the fact that some of these policy interventions take time to yield results in poverty reduction (Chart 35). In the case of the Economic and Export Diversification scenario, the additional investment required to unlock higher rates of growth initially increases poverty rates above the Current Path forecast. Of all the scenarios, the Agricultural Revolution is the most powerful way to reduce extreme poverty in the short to medium term in Nigeria. Until 2043, the Agricultural Revolution scenario has the lowest number of poor people compared to other scenarios. These findings imply that in the short to medium term, growth in the agriculture sector has the most potential to raise income and consumption among the poorest in Nigeria. However, in the long term, the contribution of agriculture to poverty reduction is projected to decline due to the structural transformation of the economy, which involves the shift of productive resources from low productivity sectors such as subsistence agriculture to higher productivity activities in the manufacturing or high-end service sector.

Chart 35 shows that the Economic and Export Diversification scenario results in the largest reduction of poor people in the long term. It is followed closely by the Demographics and Human Capital scenario. Investments aimed at developing non-resource sectors such as manufacturing take time, often decades, to yield expected results. It is also associated with short- to medium-term costs relating to poverty or consumption as they divert resources towards higher value-added activities. This is why in the Economic and Export Diversification scenario, poverty increases marginally for almost a decade above the Current Path, and thereafter it declines dramatically (Chart 35).
The findings also reveal that investing in Nigerian people is an important way to reduce poverty in the long term. Investing in human capital is a powerful way to improve productivity and the income prospects of the poor segment of society. However, it takes time to yield results, as it would take more than a decade for a child enrolled today in primary school to make meaningful contributions to the economy.

Overall, the findings show clearly that improving governance and security, reducing fertility, investing in human capital, improving basic infrastructure provision, reviving agriculture and accelerating economic and export diversification could significantly improve Nigeria’s development prospects. However, in the short to medium term, the most significant improvement in GDP, average income and poverty reduction will likely come from government efforts to revive the agriculture sector. In the long term, industrialisation will become the biggest contributor to growth, income and poverty reduction.
Combined Super Nigeria scenario

Chart 36: The size of the Nigerian economy (GDP) – Super Nigeria scenario vs the Current Path

In the preceding section, we simulated the impact of five sectoral scenarios. These sectors are, however, not isolated; they are deeply interlinked. For instance, infrastructure and human capital development are crucial for industrialisation and economic diversification. Similarly, the provision of rural roads is vital for food self-sufficiency and agriculture commercialisation. Agriculture can also pave the way to manufacturing through agriprocessing, while improving governance and security cuts across all sectors. Thus, a holistic approach or a coordinated policy push across industries is the best option to propel Nigeria to prosperity. Therefore, the Super Nigeria scenario combines all the above-mentioned sectoral scenarios. It is a scenario where Nigerian authorities make a concerted effort to remove the binding constraints on sustained, inclusive growth and development in Nigeria.

If the Super Nigeria scenario were enacted, Nigeria could expect a significant improvement to its human and economic development prospects. In this scenario, the size of the Nigerian economy measured in GDP at the market exchange rate (MER) is US$3.5 trillion larger than the Current Path forecast in 2050. On the Current Path, Nigeria is forecast to have the 12th largest economy globally by 2050. However, if the Super Nigeria scenario were implemented, the country would have the fifth largest economy globally, with a GDP of about US$6.6 trillion by 2050 (Chart 36), marginally larger than the German economy, in the Current Path forecast assumptions for other countries.
In the Super Nigeria scenario, the average Nigerian has about an additional US$11,300 in 2050 relative to the Current Path. The GDP per capita in the scenario is US$22,236 (PPP), which is double what it would be on the Current Path in 2050 (Chart 37). In the Current Path forecast assumptions for the peer groups, Nigeria’s GDP per capita in the Super Nigeria scenario is about US$7,500 higher than the average for the global lower middle-income countries and US$11,500 higher than the average for lower middle-income Africa in 2050. In terms of GDP per capita, Nigeria will rank 15th in Africa and 124th globally in 2050 on the Current Path. But in the Super Nigeria scenario, it would rank sixth in Africa and 81st globally in 2050.
The Super Nigeria scenario or the combined scenario has a dramatic impact on poverty reduction. The country will almost eradicate extreme poverty by 2050, two decades earlier than on the Current Path. The poverty rate at US$1.90 is 3.8% in 2050 instead of 22.1% on the Current Path (Chart 38). This translates to about 15 million people in extreme poverty in 2050 against 100 million people on the Current Path. In other words, 85 million fewer Nigerians live in extreme poverty in 2050 than on the Current Path.

As Nigeria is a lower middle-income country, one could also use US$3.20 per day as the poverty line, according to the World Bank. At this poverty line, 19.2% of Nigerians (or 77 million people) would live in extreme poverty by 2050 in the Super Nigeria scenario compared to 52.3% (or 209.4 million) on the Current Path in the same year.
In the Super Nigeria scenario, the number of malnourished people is more than 13 million fewer in 2050 than on the Current Path (Chart 39). The food import dependence is 19.7% of total demand against more than 50% on the Current Path in the same year. Nigeria will continue to import food but at a much lower level than the Current Path. This will reduce demand for foreign exchange and increase stability in the exchange rate and the macroeconomic environment.

Key health and population indicators underline the dramatic changes that would occur in the Super Nigeria scenario, such as a total fertility rate that declines to replacement level (2.1) by 2047 (compared to the Current Path forecast of 3.7) and a population that is 52 million smaller by 2050. By 2050 life expectancy will be 4.6 years longer than on the Current Path forecast, though men would still be living about half a year longer than women. Nigeria would also, as from 2045, have the potential to benefit from a demographic dividend with a ratio of 1.7 working-age persons for each dependant. In the Current Path forecast, Nigeria only gets to the 1.7 ratio around 2060.

Overall, Nigeria could expect a significantly brighter future if the Super Nigeria scenario were implemented. However, success will require strong political determination and commitment from Nigerian authorities as well as financial resources. The federal government revenue is currently highly dependent on crude oil export and hence vulnerable to commodity price volatility on international markets. This will have direct implications for the government’s ability to shoulder the monetary cost for the Super Nigeria scenario.

Domestic financial markets, foreign investors, domestic revenue mobilisation capacity and public–private partnership (PPP) arrangements will undoubtedly be critical for the materialisation of this scenario. Also, the implementation of the Super Nigeria scenario will require efforts to mitigate its impact on carbon emission for sustainable accelerated
development. With increased economic activity in the Super Nigeria scenario, Nigeria is forecast to produce 409 million tons of carbon compared to 271 million tons on the Current Path in 2050 (51% rise above the Current Path).
Endnotes


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Scenarios and forecasting can help Africa identify and respond to opportunities and threats. The work of the African Futures & Innovation (AFI) program at the Institute for Security Studies aims to understand and address a widening gap between indices of wellbeing in Africa and elsewhere in the world. The AFI helps stakeholders understand likely future developments. Research findings and their policy implications are widely disseminated, often in collaboration with in-country partners. Forecasting tools inspire debate and provide insights into possible trajectories that inform planning, prioritisation and effective resource allocation. Africa's future depends on today's choices and actions by governments and their non-governmental and international partners. The AFI provides empirical data that informs short- and medium-term decisions with long-term implications. The AFI enhances Africa's capacity to prepare for and respond to future challenges. The program is headed by Dr Jakkie Cilliers.