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Egypt

Egypt: Scenarios

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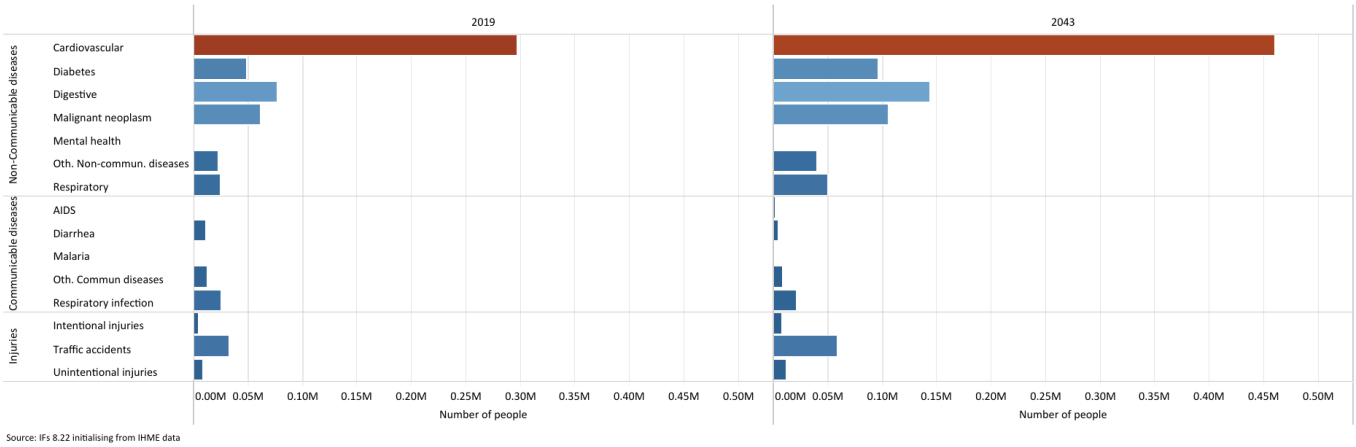
Brief

Chart 10: Relationship between Current Path and scenarios

The eight sectoral scenarios as well as their relationship to the Current Path and the Combined scenario are explained in the About Page. Chart 10 summarises the approach.

Demographics and Health scenario

Chart 11: Mortality distribution in the Current Path, 2019-2043



Source: IFs 8.22 initialising from IHME data

Chart 11 presents the mortality distribution in the Current Path from 2019 to 2043.

The Demographics and Health scenario envisions ambitious improvements in child and maternal mortality rates, enhanced access to modern contraception, and decreased mortality from communicable diseases (e.g., AIDS, diarrhoea, malaria, respiratory infections) and non-communicable diseases (e.g., diabetes), alongside advancements in safe water access and sanitation. This scenario assumes a swift demographic transition supported by heightened investments in health and water, sanitation, and hygiene (WaSH) infrastructure.

Visit the themes on Demographics and Health/WaSH for more detail on the scenario structure and interventions.

Although it is a developing country, Egypt's current health profile largely mirrors that of developed countries. The success of Egypt's long-running reforms has manifested in reduced incidents of communicable diseases, and longer life expectancy, among others. Some of the key accomplishments include a drastic decrease in rates of maternal and child deaths and chronic malnutrition. They also include the elimination of diseases like polio in 2006 and the establishment of a community health worker programme as a primary foundation towards equity in the provision of healthcare services. About 95% of its population lives within a 5 km radius of a health facility. It has also implemented the Social Health Insurance law towards achieving universal health coverage for its population.

However, alongside the successes, a range of other health issues plague Egypt's ambition of an efficient health system beyond primary care services. The country faces a brain drain of medical personnel due to poor working conditions and inadequate health facilities. The Egyptian Medical Syndicate estimates that between 2016 and 2019, out of the 220 000 registered doctors, 110 000 left the country. This means that Egypt has only 10 doctors per 10 000 people, trailing the global average of 32 per 10 000 people. Also, services in the public health sector are generally of low quality due to underfunding, lack of medical equipment and qualified personnel, poor sanitation and safety measures especially in rural areas. In 2016, it was estimated that Egypt had only 1.5 beds per 1 000 people relative to the global average of 2.7 per 1 000 people. The COVID-19 pandemic has further strained and exposed a struggling health system. All these challenges are impeding efficient healthcare delivery in the country.

Our modelling uses the International Classification of Disease (ICD) to differentiate between three broad categories of diseases: communicable, non-communicable and injuries, as well as 15 subcategories of mortality and morbidity. Unlike many African countries where communicable diseases are prevalent and leading cause of deaths, the reverse is the case in

Egypt. Non-Communicable Diseases (NCDs) have been on the rise in Egypt, particularly since 1990, and will remain the leading causes of deaths in the country well beyond 2050.

In 1990, non-communicable diseases caused about 264 000 deaths—representing about 58% of total deaths in that year. This was followed by communicable diseases that caused 151 000 deaths (33.3% of total deaths) and injuries that caused 40 000 deaths (8.8% of total deaths). It signals that the country has undergone an epidemiological transition where deaths from non-communicable diseases outweigh deaths from communicable diseases. By 2023, 85.5% of all deaths in Egypt were from non-communicable diseases, translating into 571 000 deaths. This confirms World Health Organization estimates that more than 85% of total deaths in Egypt are caused by NCDs. Rising NCDs in the country is exacerbated by the prevalence of other behavioural and biological risk factors like smoking, unhealthy diets, physical inactivity, obesity and hypertension.

Also, deaths from injuries slightly increased to 50 000 equivalent to 7.5% of all death. However, deaths from communicable diseases had steadily declined to 47 000, (equivalent to 7% of all deaths) making it the lowest caused of deaths in the country. Among non-communicable diseases, death from cardiovascular diseases is the highest causing 47.3% of deaths in the country. This is followed by deaths from digestive and malignant neoplasm diseases which account for 12.5% and 10% of total deaths in the country respectively. There is also a high prevalence of strokes, cancer, diabetes, respiratory infections and other lifestyle diseases that are inherently more expensive to treat. Smoking for example is widespread, with roughly 20% of the population using tobacco products daily. In 2015, it was reported that the prevalence of diabetes was 16.7% in people between the ages of 20 and 79, representing 7.8 million cases at the time. Obesity among adults was over 33% higher than in some developed countries and one of the highest in the MENA region. The rate of hypertension among adults stood at nearly 25%, one of the highest in the world. This trend of declining communicable diseases but rising non-communicable diseases and injuries is set to continue on the Current Path.

By 2043, non-communicable diseases will still be the highest cause of death in Egypt causing 895 000 deaths in the country (about 88.8% of all deaths). By then, deaths from communicable diseases will rapidly decline to 36 000, constituting 3.6% of all deaths, while deaths from injuries will constitute the remaining 7.7%. This rising deaths from non-communicable diseases as the main cause of mortality in the country will inevitably increase health sector costs as they are more expensive to treat and put pressure on health budget which is already limited.

Investment in water and sanitation is critical for sustained human development in Egypt. In 2023, all Egyptians had access to improved water with almost 98.8% of the population having access to piped water supply in the country. Access to improved, safe, treated water, such as piped water, is an important means of preventing the spread of communicable diseases. It is therefore not surprising that the country records very minimal communicable diseases. This trend will continue although by 2043 the proportion of Egyptians with access to piped water will slightly decline to 94% while the remaining population will have access to other improved water sources.

Despite this universal access, the country will experience a critical water shortage by 2025. The Nile Basin is Egypt's largest water source, with an allocated annual flow of 55.5 billion cubic metres. Ground and surface water sources account for about 0.5 billion cubic metres. The Nubian Sandstone Aquifer System in the Western Desert is also another important water source, but this is fossil groundwater which comes with the risk of contamination. However, Egypt requires about 90 billion cubic metres of water annually to meet its national needs and currently the water supply records a deficit of about 34 billion cubic metres. In 2018, the annual per capita share of water declined to 570 m^3 which is below the set international standard of 1 000 m^3. Also, with the completion of the Grand Ethiopian Renaissance Dam (GERD), Egypt could lose its yearly water allocation from the Blue Nile although it could benefit if it collaborates with Ethiopia. In addition, Egypt faces issues of water quality and its impact on the environment and human health. It also experiences water pollution from a range of sources including chemicals like pesticides and herbicides. Water pollution has led to diseases like bilharzia, especially in rural areas.

Meeting the population's water demand, bridging the rural–urban divide and improving water quality will require major investment. The government has signed numerous agreements seeking more funding to build desalination plants and improve long-term sustainability of water access in Egypt. However, these must be accompanied by a drive for better water management and more efficient use of this scarce resource, especially in the agriculture sector. Without closing the water supply and demand gap, Egypt is facing an inevitable crisis.

Regarding sanitation, over 98% of all Egyptians had access to improved sanitation in 2023. Only 1.5% of Egyptians lived in conditions with access to shared sanitation. On the Current Path, this trend will remain by 2043. This signals that Egypt has already attained SDGs goals 6.1 and 6.2 on universal and equitable access to safe and affordable drinking water and sanitation for all.

The National Rural Sanitation Program established by the Ministry of Housing, Utilities and Urban Communities has set a target to expand and improve nationwide access to sanitation services from. This would be through an integrated system of sewerage networks, sludge treatment and wastewater treatment plants. One of the initiatives under this programme, the Integrated Rural Sanitation in Upper Egypt-Luxor project, approved in 2019 and signed in 2021 received a US$129.8 million (€109 million) loan from the African Development Bank. This was to improve sanitation infrastructure and services to rural communities in Luxor Governorate in Egypt's Upper Nile region.

Chart 12: Infant mortality rate in the Current Path and Demographics and Health scenario, 2019-2043

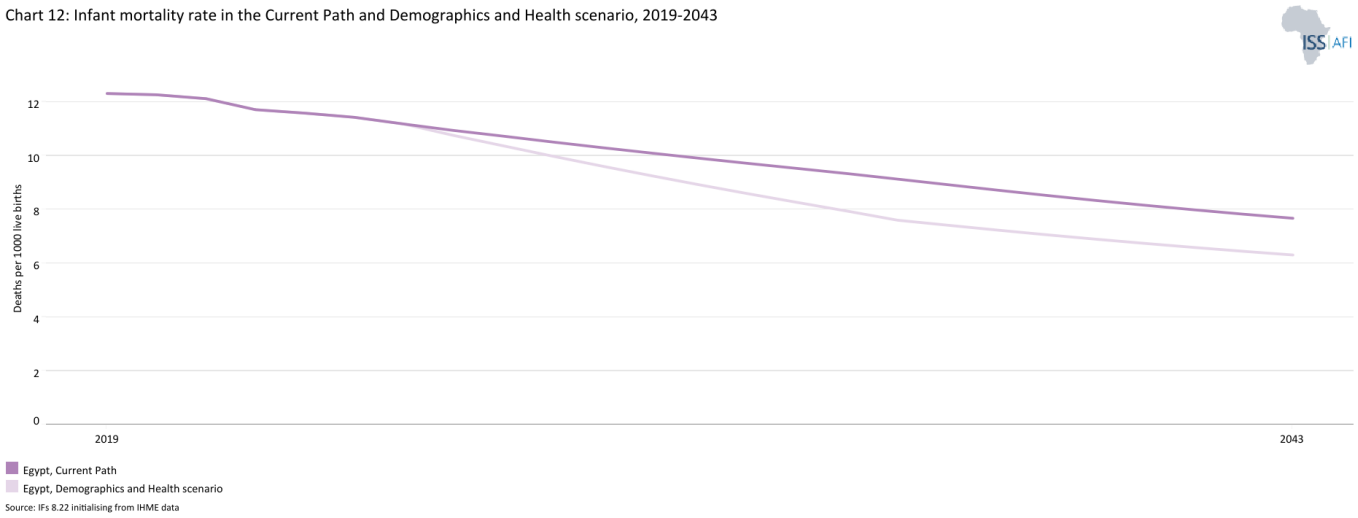


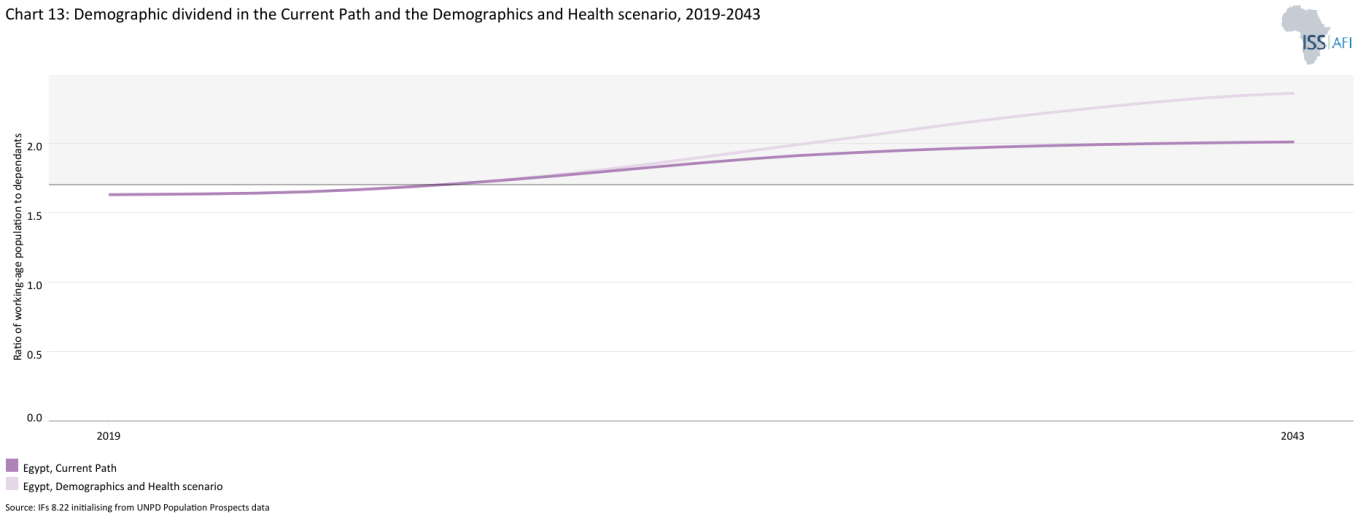
Chart 12 presents the infant mortality rate in the Current Path and in the Demographics and Health scenario, from 2019 to 2043.

The infant mortality rate is the probability of a child born in a specific year dying before reaching the age of one. It measures the child-born survival rate and reflects the social, economic and environmental conditions in which children live, including their health care. It is measured as the number of infant deaths per 1 000 live births and is an important marker of the overall quality of the health system in a country.

The infant mortality rate is an important marker of the overall quality of a country's health system. In 2023, the infant mortality rate in Egypt was 11.6 deaths per 1 000 live births—a significant drop by 448% from the rate in 1990. This was also just about a quarter of the average of 42.5 deaths for lower-middle-income countries in Africa. It means that Egypt has already met SDG goal 3.2.1 of reducing infant mortality to 12 deaths per 1 000 live births. On the Current Path, the infant mortality rate will decline further, reaching 7.7 deaths per 1 000 live births by 2043, which will still be far lower than the average of 29.4 per 1 000 live births for its lower-middle-income countries in Africa. Due to the high reduction rate that is

forecast to occur in the Current Path, the Demographics and Health scenario will modestly reduce Egypt's infant mortality rate to 6.3 deaths per 1 000 births by 2043. This is 1.4 deaths fewer than in the Current Path and almost twenty three fewer deaths than the Current Path average of lower-middle-income countries in Africa.

Chart 13: Demographic dividend in the Current Path and the Demographics and Health scenario, 2019-2043



Source: IFs 8.22 initialising from UNPD Population Prospects data

Chart 13 presents the demographic dividend in the Current Path and in the Demographics and Health scenario, from 2019 to 2043.

Demographers typically differentiate between a first, second and even third demographic dividend. Given Egypt's youthful population structure, and the strides made in the past two decades, the study focuses on the first dividend. There are different ways to conceptualise the first demographic dividend. For example, studies have shown that a promising demographic window occurs when less than 30% of the population falls within the ages 0–14 years (children) while those above the age of 65 years and above (elderly) make up less than 15%. Alternatively, a demographic dividend opens when a country attains an average median age of between 26 and 41 years. We generally use the ratio of working-age persons to dependants, i.e. the size of the labour force (between 15 and 64 years of age) relative to dependants (children and elderly people).

The demographic dividend is the economic growth generated by change in the population structure. It generally materialises when the ratio of the working-age population to dependants is at least 1.7-to-1, meaning that for every dependant, there are 1.7 workers. When there are fewer dependants to take care of, it frees up resources for investment in both physical and human capital formation. Studies have shown that about one-third of economic growth during the East Asia economic 'miracle' can be attributed to the large worker bulge and a relatively small number of dependants. However, the growth in the working-age population relative to dependants does not automatically translate into rapid economic growth unless the labour force acquires the needed skills and is absorbed by the labour market. Without sufficient education and employment generation to successfully harness their productive power, the growing labour force (especially those in urban areas) could increasingly become frustrated with the lack of job opportunities leading to social tension and even the emergence of civil instability.

In 2023, the ratio of the working-age population to dependants in Egypt was 1.65-to-1, which means that on average, for every dependant in Egypt, there were 1.65 people of working age (15–64 years of age). This is significantly above the 1.36-to-1 average for lower-middle-income countries in Africa. The low dependency rate in Egypt can be attributed to the relatively low fertility rate. On the Current Path, Egypt will achieve the minimum ratio of 1.7 working age persons for each dependant required for the materialisation of the demographic dividend, or demographic gift, by 2026. By 2043, the ratio

of the working-age population to dependants will be 2.0-to-1, far above the average for its income peers of 1.56-to-1. The Demographics and Health scenario will push the ratio further such that by 2043, the ratio of the working-age population to dependants will be 2.4-to-1 in the scenario with positive effects on productivity and economic growth.

Agriculture scenario

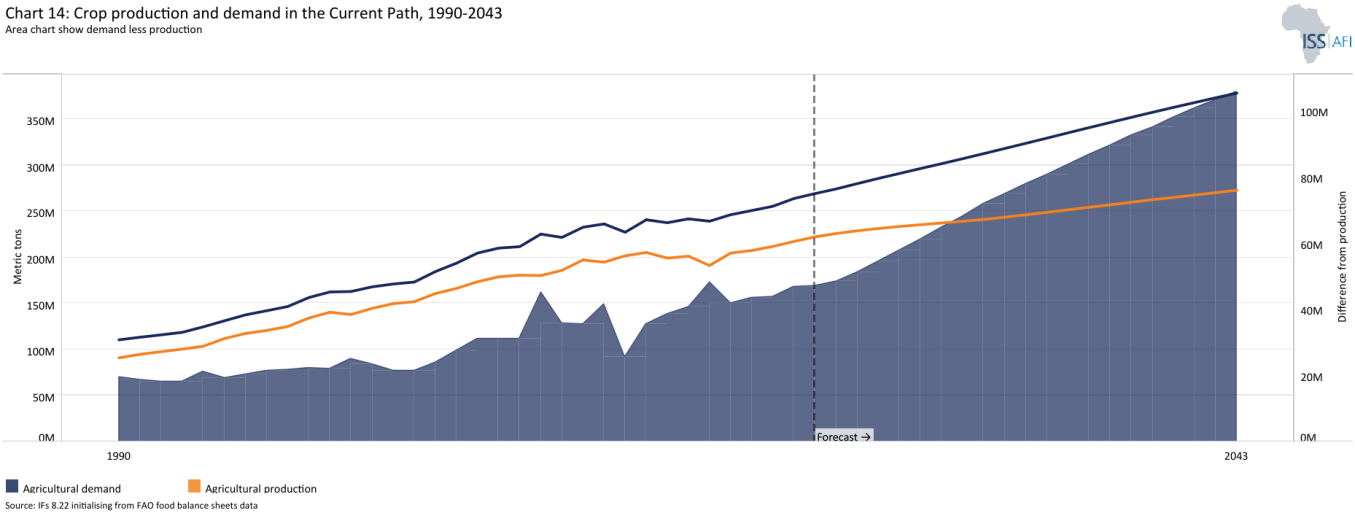


Chart 14 presents crop production and demand in the Current Path from 1990 to 2043.

The Agriculture scenario envisions an agricultural revolution that ensures food security through ambitious yet feasible increases in yields per hectare, thanks to improved management, seed, fertiliser technology, and expanded irrigation and equipped land. Efforts to reduce food loss and waste are emphasised, with increased calorie consumption as an indicator of self-sufficiency and prioritising it over food exports. Additionally, enhanced forest protection signifies a commitment to sustainable land use practices.

Visit the theme on Agriculture for our conceptualisation and details on the scenario structure and interventions.

The agricultural sector provides employment to about 28% of the population, 45% of women and 55% of people in Upper Egypt. The Nile's predictability and Egypt's fertile soil have allowed the country to build significant agricultural wealth over the years. Egypt's agricultural land is estimated to be about 360 km^2, representing only about 3.9% of the country's total land area. The area of cultivated land per person is only about 0.05 hectare, one of the lowest globally. Most of that is located in a narrow strip along the Nile Delta and 'new lands' reclaimed from the desert after the construction of the Aswan Dam.

The major challenges facing the future of agriculture in Egypt include scanty rainfall, loss of agricultural land to urbanisation and the impact of Egypt's dispute with Ethiopia on the Nile water upon which it relies for irrigation. There are also climatic factors, such as flood arising from the Nile River Delta, which constrain agricultural production. High production and consumption losses is further straining the sector. A 2015 study reported that out of the respondents surveyed, only about 14% indicated that they did not throw away food and that food waste increased during the fasting month of Ramadan.

In 1990, Egypt's average crop yield of 17.4 metric tons per hectare was fourth highest in Africa and the highest among its income-group peers in Africa. By 2023, the average crop yield per hectare of 27.4 metric tons in Egypt was third highest in Africa after Mauritius and Eswatini and the highest among the lower-middle-income countries in Africa. This means that compared to its income-group peers, Egypt has been able to adopt improved technology and mechanised agriculture that significantly increased its yield per hectare. The country has leveraged on the Nile river to develop an irrigation system for large-scale mechanised agriculture. On the Current Path, yield per hectare will rise to 31.3 metric tons per hectare by 2043,

which will be more than six times the average of lower-middle-income African countries. Sustaining Egypt's agricultural yields will prove challenging in the face of increased population growth, controversy about the Nile water and limited and declining agricultural land.

Total agriculture production in 1990 stood at about 45 million metric tons. Of this, 41.9 million metric tons, representing 92.1%, were crops, with the remainder constituting meat production. By 2023, total agricultural production in Egypt had grown to 111.2 million metric tons. Of this, crop production constituted 89.7%, equivalent to 99.7 million metric tons, meat production 8.3%, and fish production constituted the remainder of the total production.

Egypt faces huge crop loss and waste estimated at 19.3% of total production. This is largely due to post-harvest losses for crops, estimated at 7.5% of production, and transmission losses for crops, at 8.5.%. Such losses can be a result of pest and disease infections, spoilage and the lack of adequate and effective storage facilities. Fish and meat also witnessed loss and waste accounting for 29.7% and 20% of total production respectively.

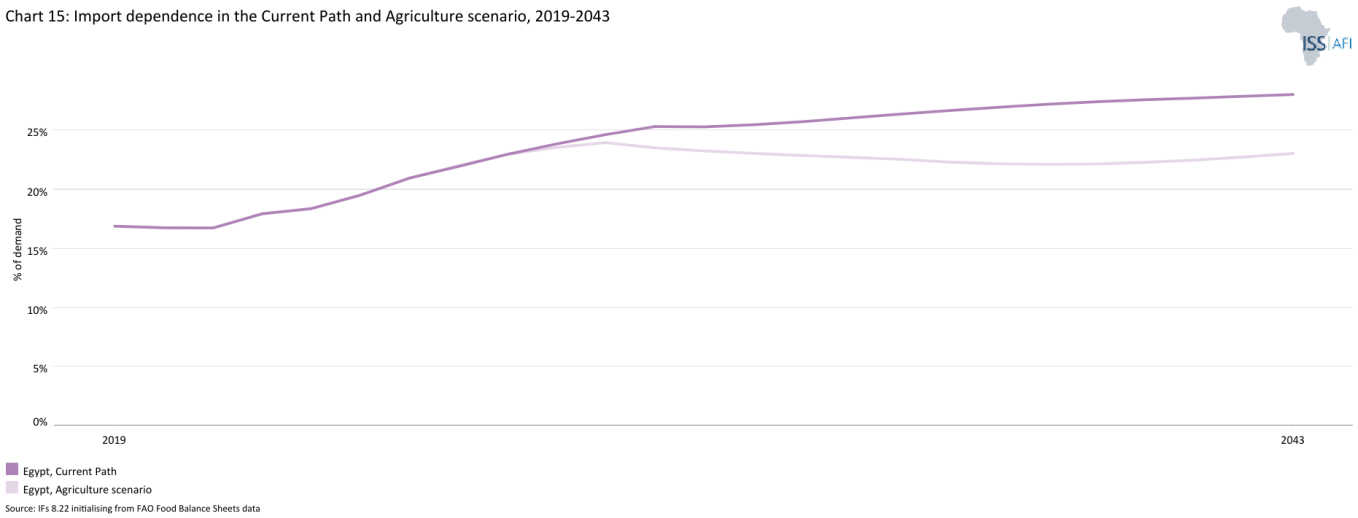
There are efforts to improve agriculture production in the country. The Government is on a drive to reclaim more land for agriculture with a target of an additional 150 000 acres (60 000 hectares) per year. The government is also taking initiatives to boost domestic production and promote sustainable and green farming. Despite these efforts, much more needs to be done to make the agricultural system more efficient and better geared towards policies that incentivise farmers to focus on food products for which Egypt has a comparative advantage.

In terms of demand, the total demand for agricultural products in Egypt has always been more than the total production. Total demand stood at about 55.3 million metric tons in 1990, of which 50.7 million metric tons, equivalent to 92% of total demand, were for crops. The remaining demand was for meat (4.1 million tons) and for fish (510 000 tons). Since then, domestic demand has rapidly outgrown production, and by 2023, agricultural demand exceeded domestic production by 23.5 million metric tons, despite the increase in production. Of the total demand of 134.7 million tons, 90.1% is for crops (122 million tons). The remaining demand is for meat (9.8 million tons) and for fish (2.9 million tons). Despite the increase in domestic production, reaching 136.5 million metric tons in 2043, it will not be enough to meet domestic demand that will rapidly grow to 189.2 million metric tons. As a result, excess demand for agricultural products will reach 52.7 million by 2043. This indicates that Egypt faces the risk of food shortages in the future if drastic measures are not taken to revamp the agriculture sector to increase domestic production.

With total agricultural demand outgrowing domestic production, Egypt will have to rely on imports to meet its domestic demand. In 2023, Egypt's net import of crops stood at 19% of total crop demand, which was more than the average of 13.4% for lower-middle-income countries in Africa. Also, net import of fish stood at 39% of total fish demand, while net import of meat was estimated at just 1% of total meat demand. Commodities such as wheat, lentils, red meat, sugar and oils are mostly imported as domestic demand outstrips local production capacity. For instance, in 2019, Egypt imported US$4.67 billion in wheat, becoming the 1st-largest importer of wheat globally. However, Egypt is food-sufficient when it comes to commodities like rice, fruits, vegetables, poultry and dairy products.

In light of its huge population, shrinking agricultural land, water scarcity and other effects of climate change, Egypt remains food insecure and vulnerable to international price shocks and disruptions in supply chains. In the Current Path, net crop imports will grow in Egypt to 30.1% of total crop demand by 2043. This suggests a growing level of national food insecurity; however, it can also be as a result of changes in dietary preferences. Greater import dependence makes Egypt more vulnerable to international price shocks and accompanying risks of disruptions in the global supply chains as seen during COVID-19. Thus, while Egypt has increased agricultural production, the sector needs major reform to focus and incentivise production of goods like vegetables and fruits in which Egypt has a comparative advantage.

Chart 15: Import dependence in the Current Path and Agriculture scenario, 2019-2043



Source: IFs 8.22 initialising from FAO Food Balance Sheets data

Chart 15 presents the import dependence in the Current Path and the Agriculture scenario, from 2019 to 2043.

In the Agriculture scenario, yield per hectare will increase to 33 metric tons by 2043—a 5.4% improvement compared to the Current Path and over five times the average of lower-middle-income countries in Africa. The improvement in yields will lead to an improvement in total agricultural production. By 2043, in the Agriculture scenario, total production will increase to 143.8 million tons, almost 7.2 million metric tons, or 5.3%, more than the Current Path by 2043. Annual crop production in Egypt will rise by 6.4% over the Current Path to 115.1 million tons in the Agriculture scenario by 2043. The increases in crop production in the Agriculture scenario reduces the import dependency of crops in the country compared to the Current Path. By 2043, net import of crops will reach 24.4% in the Agriculture scenario—6 percentage points less than Current Path and the average of its income-group peers in Africa.

Education scenario

Chart 16: Progress through education funnel in the Current Path, 2023-2043

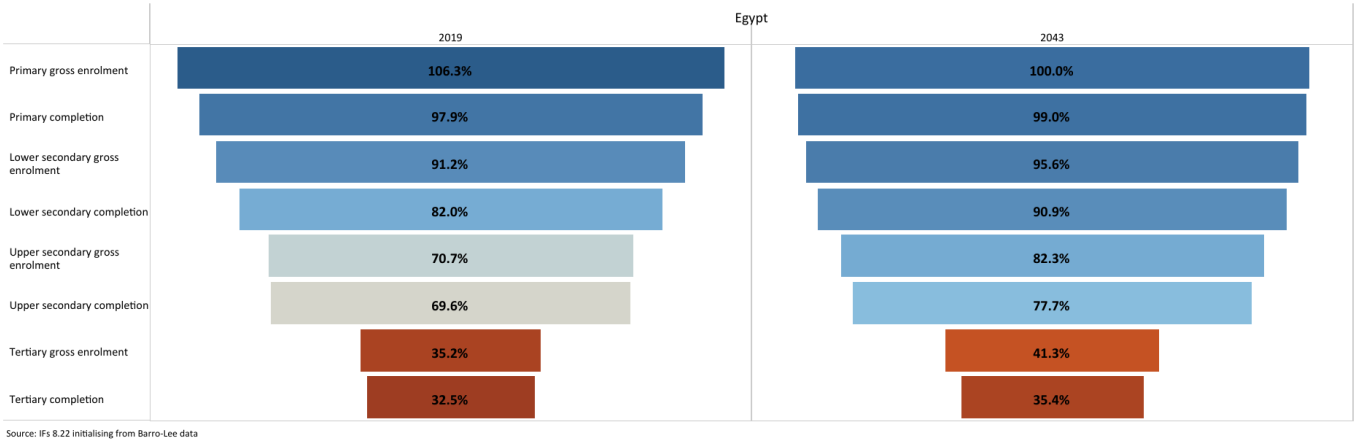


Chart 16 depicts the progress through the educational system in the Current Path for 2019 to 2043.

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

Visit the theme on Education for our conceptualisation and details on the scenario structure and interventions.

The public education system in Egypt consists of four stages of learning. The basic and compulsory education stage for children between four and 14 years comprises kindergarten for two years followed by primary school for six years and preparatory school (ISCED Level 2) for three years. Then, the secondary school (ISCED Level 3) stage is for three years, for ages 14/15 to 17, followed by the tertiary level. After independence Egypt introduced many educational initiatives and reforms, and the education system has made significant strides with improved educational outcomes in recent decades. The literacy rate stood at approximately 74% in 2020, while the number of elementary-age out-of-school children has dropped after rapid increases following the 2011 revolution.

Despite many initiatives, including compulsory education, the sector still faces numerous challenges. Key among these is Egypt's rapid population growth, whose ramifications have been borne in the education sector through sharp increases and demand for enrolment both at primary and secondary level. This means greater funding requirements, capacity shortages and overcrowded learning facilities, particularly in denser regions like Cairo, Alexandria and Giza. Although the teacher-student ratio has risen in the past few years, teacher salaries have fallen. In 2017, the average teacher salary was about £86 000 (US$4 800). This is just 1.3 times the average GDP per capita of Egypt and way below the World Bank recommended average teacher salary of 3 to 3.5 times the GDP per capita for a productive education system. Due to the inadequacy of the education system, many skilled teachers have turned to private tutoring, which pays better than the public education system. An estimated 42% of household income is spent on after-school tutoring, but some learners drop out of school because they cannot afford to sustainably access supplementary tutoring.

In 2023, Egypt spent US$12.5 billion on its education system—this amount is equivalent to 3.8% of the country's GDP. At this rate, Egypt's spending on education was below the average of 4.5% for lower-middle-income countries in Africa. On the Current Path, Egypt's total expenditure on education will reach US$31.1 billion, constituting 3.8% of GDP, by 2043.

About 35.3 of spending on education in Egypt is on the tertiary level making it the largest educational expenditure in the country. This departs from the trend observed in most African countries where much of the spending is done at the primary or lower secondary level. The high spending at the tertiary levels is partly explained by the high cost of training students at the tertiary especially in the sciences and engineering compared to other levels. On average, it costs US$1 365 to educate a student at tertiary level. This is almost 3 times what was spent on upper secondary students, 4.6 times the cost of educating a child at the lower secondary level and 5.2 times more than what it costs to educate a primary level student. Nonetheless, spending at the primary level constitutes 33.2% while spending on lower and upper secondary levels constitute 16.1% and 15.9% respectively.

The education system can be viewed as a long funnel where children enter at the primary level and exit after completing tertiary-level education. Many children that enter the system at the wide mouth of the funnel, but few complete the entire journey—from primary to secondary school and then university—to eventually graduate with a tertiary or equivalent education at the other end. However, the education funnel in Egypt largely mirrors that of a developed country with less leakages and cracks along the way. In 2023, the gross enrolment rate for primary school students in Egypt was 104.2%, an increase from 91.0% in 1990 higher than the average of 101% of lower-middle-income countries in Africa. Comparing this to the net enrolment rate of almost 99.6% in the same period leads to two important conclusions. Firstly, almost all children in Egypt who are of school-going age are in school. Secondly, many classrooms in Egypt are likely to be filled by children of the appropriate age group compared to most other African countries where classrooms are crowded by older students. On the Current Path, Egypt's gross and net enrolment rates will be the same, reaching 100% by 2043.

The gross primary completion rate stood at almost 100% in 2023, indicating that almost all children who enrolled in primary school completed the last grade in Egypt which departed from the trend in most low- and lower-middle-income countries in Africa that usually have high dropout rates. On the Current Path, Egypts progress in ensuring more children complete primary school will be maintained throughout the forecast period such that by 2043, almost every primary school student will complete the last grade. This progress in Egypt mirrors that of a developed country and advanced educational system where access at the basic level is universal and an older population that is highly educated. Of those who complete primary level education, some will transition immediately to the lower secondary level, some will enrol in the lower secondary level after some years out of school and some will never enter the lower secondary level, and so on through the upper secondary and tertiary levels.

In Egypt, more students transition from primary level to lower-secondary level than they do from lower secondary level to upper-secondary level. In both cases, the rates are higher than Egypts income-group peers in Africa: gross enrolment for lower- and upper-secondary levels in the country stood at 93.1% and 72.4%, respectively, in 2023. These rates are far above the averages of 71% and 45.9% for its income peers. The high enrolment rates at the primary and secondary levels is due to Egypt’s free and compulsory education for children between ages 6 to 15 years. However, this put pressure on teaching and learning materials particularly in densely populated areas such as Cairo, Alexandria and Giza. As a result, about 30% of school children particularly in the rural areas lack learning materials.

By 2043, gross enrolment for the lower-secondary level will rise to 95.6%, while that of the upper-secondary level will rise to 82.3%. In 2023, completion rates stood at 81.9% in the lower-secondary level while that of upper-secondary level was 69.2%. Although these rates are far above the average for its income peers in Africa (53.2% for lower-secondary and 35.8% for upper-secondary), it is an indication of a contraction in the educational funnel in Egypt. By 2043, 90.9% of students will complete their lower-secondary education compared to 77.7% in upper-secondary level.

At tertiary level, the situation is less rosy. In its effort to expand capacity in the tertiary sector, Egypt has successfully sought to establish itself as a major higher learning destination. It has attracted many foreign learners from the MENA region and sub-Saharan Africa mainly due to its low tuition and living expenses, scholarships, free admission of non-citizens and international partnerships. The country also hosts many reputable international universities like the American University in Cairo, the German University in Cairo, the British University in Egypt, and the Université Française

d'Egypte. Furthermore, in 2018, Egypt enacted legislation to attract more international universities to establish their foreign branches in the country with more streamlined licensing procedures, affordable real estate, tax breaks and requirements to teach the same programmes as in their home countries. These policies are meant to enhance the global competitiveness of Egypt's education system, increase capacity and intake, enhance performance of domestic universities by increasing competition, foster research collaboration and inbound student mobility, and ultimately improve the stock of human capital in the country.

Despite these efforts, enrolments in the tertiary level remain low. In 2023, only 34.4% of people within the age group were enrolled in tertiary institutions in Egypt, and this will only improve to about 41.4% by 2043 on the Current Path. Although this is low, it is almost twice the average rate for lower-middle-income countries in Africa of 18%. About 31% of the relevant age group in Egypt graduated from a tertiary institution with at least a first degree in 2023 and will slightly rise to 35.4% by 2043. This is nearly three times the average rate in lower-middle-income countries although the gap between Egypt and its income peers will close over the forecast period.

Egypt has done well to eliminate the gender gap in access to education Unlike its income peers, there is no gender inequality in access at the primary level as the ratio of females to males enrolment and completion are 100% in Egypt and forecast to continue on the Current Path even by 2043. At secondary level, there were 98 females enrolled in lower-secondary schools for every 100 males in Egypt, as opposed to the average of 95 females for every 100 males in lower-middle-income Africa. At the upper-secondary level, there were 96 females for every 100 males in Egypt, almost at par with the average of lower-middle-income African countries in 2023. However, the ratio is lower when it comes to completion. In 2023, there were 89 and 98 females who completed in lower- and upper-secondary schools respectively for every 100 males in Egypt. At tertiary level, the gap is closed as it reaches parity with the ratio of females to male students almost similar to the average of its income group in Africa.

Vocational training has always been a large part of Egypt's education system. Under Mubarak, one of the best-known schemes — originally called the Mubarak-Kohl Initiative, now known as the dual system — was launched in 1994 by the Ministry of Education and the Deutsche Gesellschaft für Internationale Zusammenarbeit to promote technical training. Since 2015, other technical and vocational education and training (TVET) schemes such as the 'Integrated TVET scheme' and 'Life-long learning' (Oumal System) have been rolled out by the government, with a strong emphasis on apprenticeship. Although these efforts have scaled up TVET programmes, increased training opportunities are still needed in Egypt. The government envisions a 50% increase in the dual education system in all schools by 2025. This would be a huge increase in the number of trainees undergoing TVET training.

Enrolments in vocational training and science and engineering education, which are considered crucial to the future of work, are quite encouraging. In 2023, about 46.8% of upper-secondary school students were enrolled in vocational training programmes in Egypt. This is more than three times the average for lower-middle-income countries in Africa and the second highest in the group, only below the rates in Angola. On the Current Path, this trend will continue even by 2043. However, the engineering and science education at the tertiary level is relatively low in Egypt. In 2023, 11% of tertiary graduates in Egypt enrolled in science and engineering programmes. This was below the average of 16.6% for lower-middle-income countries in Africa. However, on the Current Path, Egypt will close this gap so that by 2043, its rate of 19.2% will almost be at par with the 19.5% average for its income peers in Africa.

Beyond the limited access to education in the country, there are also problems with the quality of education. Educational outcomes are generally good, but bottlenecks have emerged at secondary and higher education levels. The country has a 0.49 score (the index ranges between 0 and 1) in the Human Capital Index of 2020 — a score slightly lower than the Middle East and North Africa's average at 0.51 and slightly higher than that of sub-Saharan Africa (0.40).

In 2023, the average test score for primary and secondary students in Egypt stood at 38 and 43.5 out of 100, respectively. Both the primary and secondary test score for Egypt was above the average of 33.3 and 41.8 for its income-group peers in

Africa respectively. Although Egypt performs relatively well at primary and upper-secondary levels, tertiary outcomes are quite poor relative to the comparison countries and groups. As a result, the World Economic Forum's Global Competitiveness Report for 2017/18 ranked Egypt's quality of primary education at position 133 out of 137 countries — only two positions ahead of war-ravaged Yemen. The number and availability of qualified teachers and desire for teacher training and deployment into public schools is dropping and will continue to do so if the issue of teacher remuneration is not addressed.

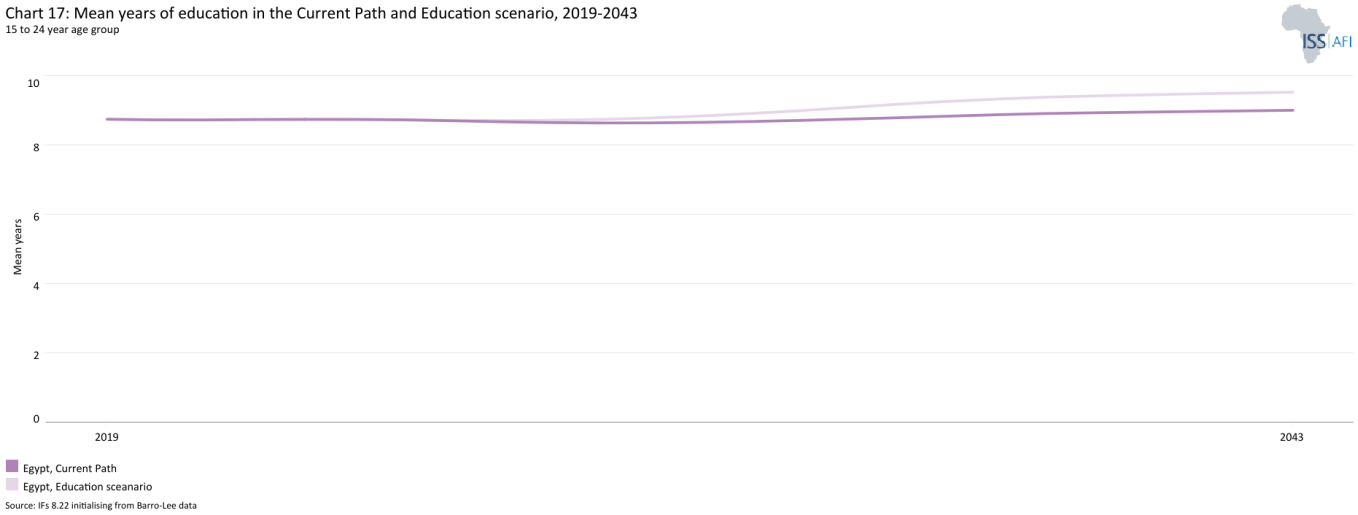


Chart 17 presents the mean years of education in the Current Path and in the Education scenario, from 2019 to 2043, for the 15 to 24 age group.

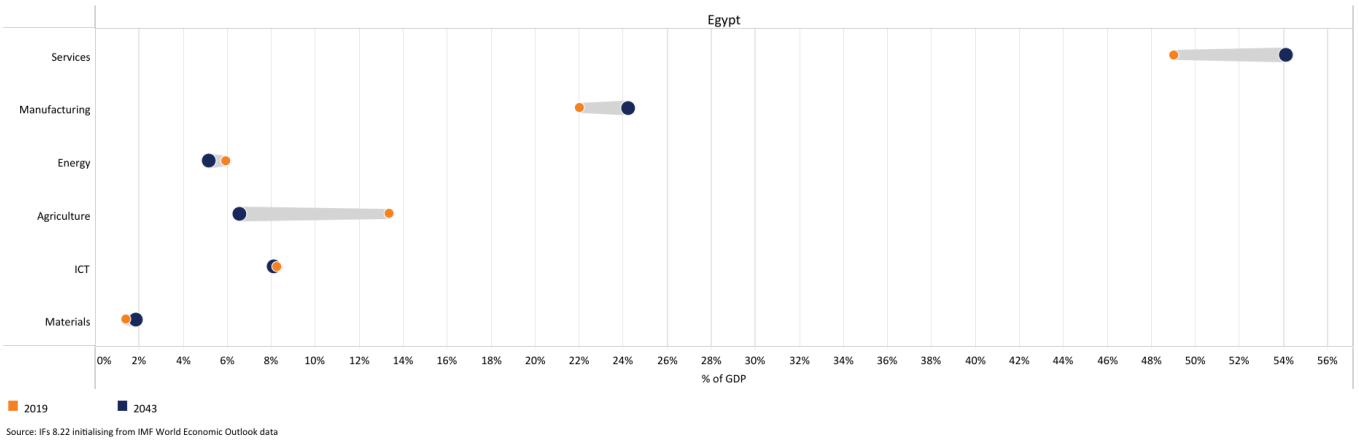
The average years of education in the adult population (aged 15 years and older) is a good first indicator of the stock of knowledge in society.

In 2023, the mean years of education attained by adults between 15 and 24 years in Egypt stood at 8.8 years— below the average of 7.8 years for lower-middle-income countries on the continent. In the Current Path, the average Egyptian between the ages of 15 and 24 years will have received 8.5 years of education by 2043. On average, females received 0.4 years more schooling than males and forecast to remain till 2043. In the Education scenario, the mean years of adult education in Egypt will increase to 9.5 by 2043, 0.5 years more than the Current Path and higher than the average for lower-middle-income countries in Africa. The interventions in the Education scenario also close the gender gap in educational attainment in Egypt.

The Education scenario further increases average test scores for primary students in the Education scenario to 46.1 in 2043, which is 17.1% more than in the Current Path and 31.6% above the average of lower-middle-income countries in Africa in the same year. By 2043, the average test scores for secondary students in Egypt will rise to 51.8%—this is 15.8% higher than the Current Path and the average of lower-middle-income countries in Africa. It means that the Education scenario has the potential to improve the quality of education (reflected in the test scores) in Egypt above that of its income-group peers in Africa.

Manufacturing scenario

Chart 18: Value-add by sector as % of GDP in the Current Path, 2019-2043



Source: IFs 8.22 initialising from IMF World Economic Outlook data

Chart 18 presents the share of GDP in the Current Path from 2019 to 2043.

In the Manufacturing scenario, reasonable but ambitious growth in manufacturing is envisaged through increased investment in the sector, research and development (R&D), and improved government regulation of businesses. This aims to enhance total labour participation rates, particularly among females where appropriate and is accompanied by increased welfare transfers to unskilled workers to mitigate the initial rises in inequality typically associated with a low-end manufacturing transition.

Visit the theme on Manufacturing for our conceptualisation and details on the scenario structure and interventions.

The manufacturing sector in Egypt is one of the largest in Africa both relating to GDP and per capita terms. In 2019, the manufacturing sector employs about 12% total employment in the country. In the 1950s and 1960s, Egypt embarked on an import substitution industrialisation strategy. This has produced many of its industries that are in existence today. The government plays a significant role in the national industrialization agenda with state-owned enterprises accounting for 9%. Egypt is the largest producer of steel in Africa and ranks 21st globally with 7.8 million metric tons produced in 2019. Egypt also boasts a growing automobile industry that was ranked 49th globally in 2017 although it produces 16 times fewer cars than South Africa. However, low and medium-technology accounts for 50% of domestic manufacturing value added. For instance, its textiles industry which originates from the 1950s accounts for 20% of employment in the country.

In recent years, the performance of the sector has not been the best. Although Egypt was ranked 62nd globally on the SDG-9 Industry Index in 2000, by 2017 the country has declined to 71st position while other countries such as Morocco and Tunisia in the region have been improving. Efforts by the government to reverse this trend include simplified business registration procedures, industrial licensing and land allocation which create an enabling environment for businesses especially micro, small and medium scale enterprises (MSME) to thrive. However, factors such as limited access to knowledge and capital, inadequate skilled workforce and unfavourable trade policies still impede the growth of MSMEs.

The three largest contributors to GDP in Egypt are the service, manufacturing and agriculture sectors. In 2023, the service sector in Egypt contributed US$161.7 billion to the economy, equivalent to 49.3% of GDP. The service sector employs nearly half of the population and is dominated by telecommunications and tourism. In fact, tourism alone accounts for 15% of GDP and employs 15% of the total workforce. Due to the COVID-19, the tourism sector declined with reductions of up to 54.9% in travel receipts between January and June 2020, and upwards of US$7.7 billion in 2020 although now

bounced back. This is followed by the contribution of the manufacturing sector valued at US$72.5 billion, equivalent to about 22.1% of GDP.

Manufacturing production ranges from refined petroleum, food and beverages, textiles, chemicals and engineering products such as transport equipment, electronics and electrical, basic metals, fabricated metals and machinery. Although Egypt has a relatively higher share of medium and high-tech industries above the average of Africa, it is significantly below that of its regional comparator Morocco. The Agriculture sector, contributed US$41.7 billion, representing 12.7% of GDP in 2023. In the same period, the information and communications (ICT) sector contributed US$27.0 billion, constituting 8.2% of GDP, while the contributions of the energy and materials sectors were valued at US$19.7 billion (6% of GDP) and US$4.6 billion (1.4% of GDP), respectively.

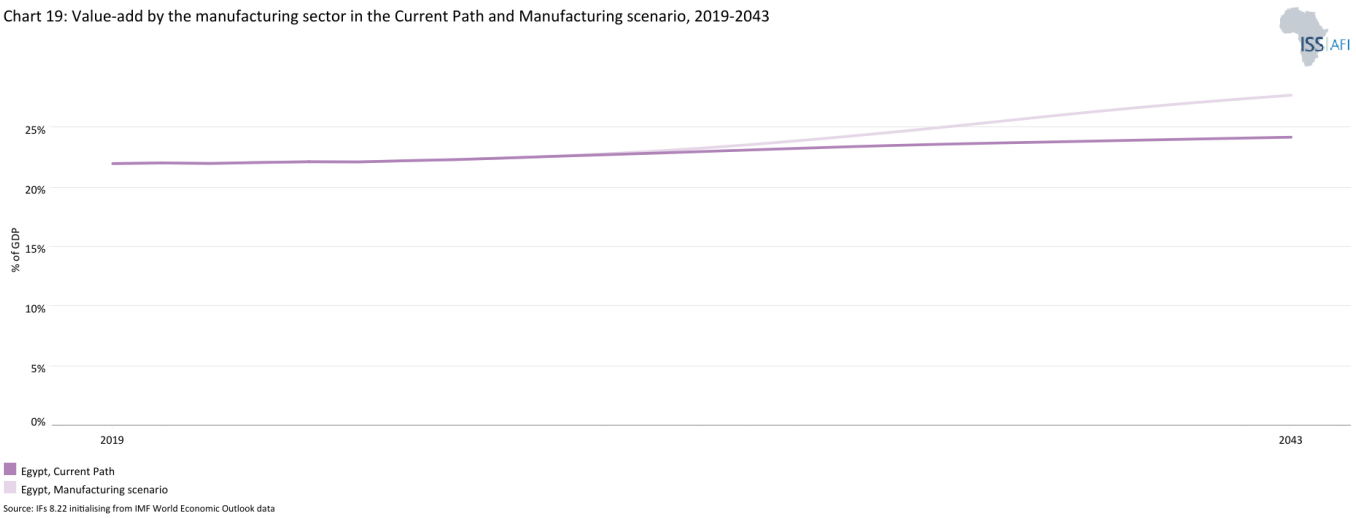
On the Current Path, the service sector will extend its dominance in the economy with its contribution to GDP to more than double in size to US$446.8 billion by 2043 (54.1% of GDP). By 2043, the manufacturing sector will still be the second-largest contributor and will be valued at US$200.0 billion (24.2% of GDP). The ICT sector in Egypt will overtake the agriculture sector by 2043 as the third-largest sector valued at 68.9 US$ billion. At this rate, the contribution of ICT to GDP will be about 1.5 percentage points larger than agriculture at US$54.2 billion. The energy and material sectors' contributions in 2043 will be valued at US$42.6 billion and US$15.1 billion, corresponding to 5.2% and 1.8% of GDP, respectively.

A critical goal in Egypt's Vision 2030 Sustainable Development Strategy is to become a knowledge-based market economy and increase the share of high-technology exports in total manufacturing. Achieving this requires eliminating barriers that impede Egypt's transition to high technology manufacturing as discussed above.

Typically when countries embark on a manufacturing transition, inequality and poverty may initially increase. This is because resources and investments are diverted to more capital and knowledge-intensive sectors, which leads to an initial crunch in consumption. However, in the long term, these efforts stimulate inclusive growth with a greater impact on poverty and inequality reduction. Policies aimed at industrialisation, therefore, need to be accompanied by measures to mitigate these initial adverse effects. These could include efforts to directly support extremely poor families through social programmes or welfare spending to cushion vulnerable people.

Welfare transfers in Egypt are very low compared to its income-group peers on the continent. Since 2015, as part of its welfare transfer, the Egyptian government has made allocations for subsidies, grants and social benefits to poor households through its conditional cash transfer programmes, Takaful and Karama. In the first part of the 2020/21 fiscal year alone, the budget on food subsidies, grants and social benefits amounted to £100 billion. In 2023, the total welfare transfers to unskilled households in Egypt amounted to US$19.3 billion equivalent to 10.1% of GDP, above the average for lower-middle-income African countries. On the Current Path, government welfare transfers to households will increase to about US$44.1 although this will represent 9.4% of GDP by 2043. Despite this decline, it will still be slightly above the average of 7% of GDP for Egypt's income-group peers in Africa.

Chart 19: Value-add by the manufacturing sector in the Current Path and Manufacturing scenario, 2019-2043



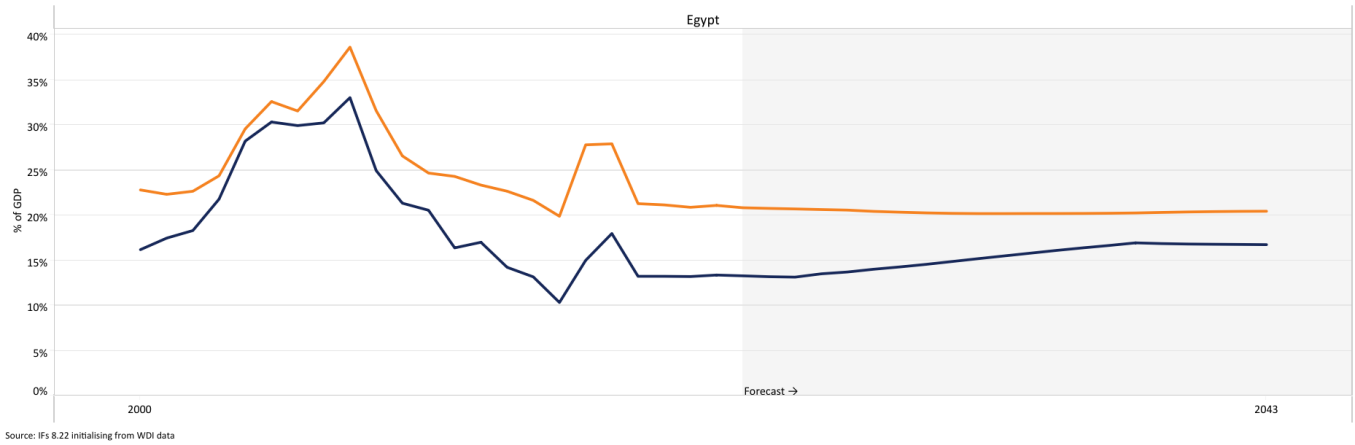
Source: IFs 8.22 initialising from IMF World Economic Outlook data

Chart 19 presents the contribution of the manufacturing sector to GDP in the Current Path and in the Manufacturing scenario, from 2019 to 2023. The data is in US$ and % of GDP.

In the Manufacturing scenario, Egypt makes substantial progress in industrialisation such that, by 2043, the share of the manufacturing sector in GDP is about 27.8% equivalent to US$256.4 billion. This will be about 3.5 percentage points of GDP above the Current Path valued at US$56.4 billion. However, industrialisation is a difficult and long-term process. It requires constructive relationships between the state, which provides encouragement and support, and the private sector. Firms need a state with strong capabilities in setting an overall economic vision and strategy, efficiently providing supportive infrastructure and services, and maintaining a regulatory environment conducive to entrepreneurial activity. Additionally, firms need a state that makes it easier to acquire new technology and enter new economic activities and markets.

AfCFTA scenario

Chart 20: Export and imports as % of GDP in the Current Path, 2000-2043



Source: IFs 8.22 initialising from WDI data

Chart 20 depicts exports and imports as a percentage of GDP, from 2000 to 2043, in the Current Path and in the AfCFTA scenario.

The AfCFTA scenario represents the impact of fully implementing the African Continental Free Trade Agreement by 2034. The scenario increases exports in manufacturing, agriculture, services, ICT, materials and energy exports. It also includes improved multifactor productivity growth from trade and reduced tariffs for all sectors.

Visit the theme on AfCFTA for our conceptualisation and details on the scenario structure and interventions.

In 1990, the sum of Egypt's exports and imports stood at 52.9% of GDP, which was above the average of 48.3% for lower-middle-income countries in Africa. However, since 2009 , Egypt's economy has become less open to trade compared to its income peers in Africa. By 2023, trade openness declined to 34.1% of GDP compared to the 43.7% average for lower-middle-income African countries. On the Current Path, this trend will continue as the sum of Egypt's export and imports slightly increase to 37.2% of GDP as compared to average of 50.5% for its income peers in Africa.

Over the years, Egypt has made efforts to improve its trade. The country has signed the Tripartite Free Trade Area (TFTA) that seeks to facilitate movement of goods (largely on a tariff framework) among the signatory country territories. The TFTA essentially integrated three existing African trading blocs — the East African Community, the Southern African Development Community and the Common Market for Eastern and Southern Africa. This deal would harmonise trade in the three regions and eliminate overlapping trade rules to reduce the cost of doing business. In addition, the country has also ratified its membership to the African Continental Free Trade Area (AfCFTA) agreement, and this trade agreement would allow and facilitate the entry of Egyptian goods into the sub-Saharan market. In recent years, the country has entered a trilateral cooperation with Jordan and Iraq to improve the mobilisation of resources and the implementation of practical programmes in the areas of common challenges, especially on climate change, food security and livelihoods.

However, Egypt trades very little with the North Africa and Maghreb bloc, as well as sub-Saharan Africa. Currently, the country's trade with Africa constitutes just about 3% of its total trade volume, although the continent has a large market size. Indeed its top trading partners are the United States (US), United Arab Emirates (UAE), Saudi Arabia, Italy, Turkey, China, Russia and Germany. Other obstacles to trade and investment in the country include excessive bureaucracy, corruption, non-tariff barriers, inadequate skilled labour, low access to credit, difficult customs procedures, and intellectual property issues.

In 1990, the total export volume in Egypt stood at US$16.3 billion, constituting 20.4% of GDP, below the average of 23.5% for its income-group peers. Since then, exports from Egypt have grown rapidly. By 2023, Mali's exports stood at US$43.5 billion, equivalent to 13.3% of GDP, still below the average of 19.2% for lower-middle-income African countries. Its major exports include petroleum, crude petroleum, gold and nitrogen fertilisers mostly to Turkey, Italy, Spain, United States of America and India. On the Current Path, total exports in Egypt will reach 16.8% of GDP, equivalent to US$139 billion, in 2043, lower than the 23.3% average of its income-group peers in Africa.

In terms of imports, Egypt's total imports grew from US$26 billion, equivalent to 32.6% of GDP in 1990 to US$68.2 billion, representing 20.8% of GDP, in 2019. At that rate, total imports as a proportion of GDP in Egypt were lower than the estimated average of 24.5% for lower-middle-income African countries in the same year. The country imports large volumes of refined petroleum, crude petroleum and wheat. Indeed in 2022, Egypt was the biggest importer of wheat globally. Other top imports of the country are petroleum gas, cars and packaged medicaments. Imports to Egypt are sourced mainly from China, United States of America, United Arab Emirates and Turkey. On the Current Path, Egypt's import as a proportion of GDP will stagnate around the same figure so that by 2043 it will be 20.4% equivalent to US$169.2 billion and below the 27.2% average for its income peers.

Chart 21: Trade balance in the Current Path and AfCFTA scenario, 2019-2043

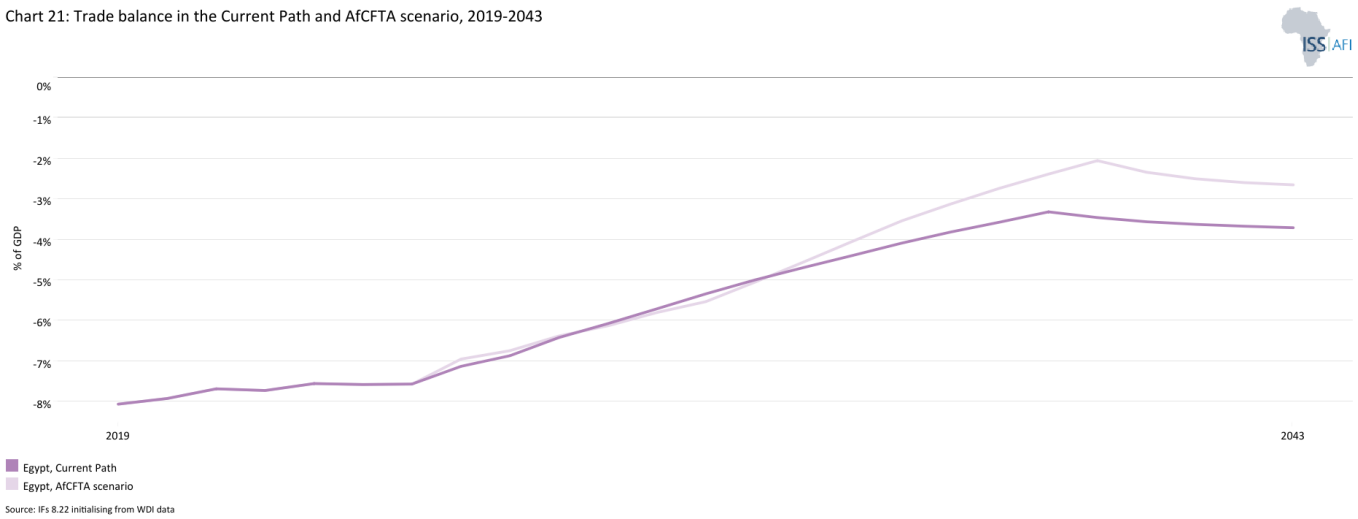


Chart 21 presents the trade balance in the Current Path and in the AfCFTA scenario from 2019 to 2043 as a percentage of GDP.

The high import volumes coupled with its low export volumes leads to a chronic deficit in Egypt's trade balance. Like most African countries, it imports large volumes of mostly finished or processed goods. Its export quantities are small, and most of it is raw materials, with little or no value addition occurring within the country. This results in low export revenues and higher import expenditures. Egypt's trade deficit in 2023 constituted 7.5% of GDP, an improvement from the 12% it recorded in 1990. However, it was above the average of 5.2% for lower-middle-income African countries.

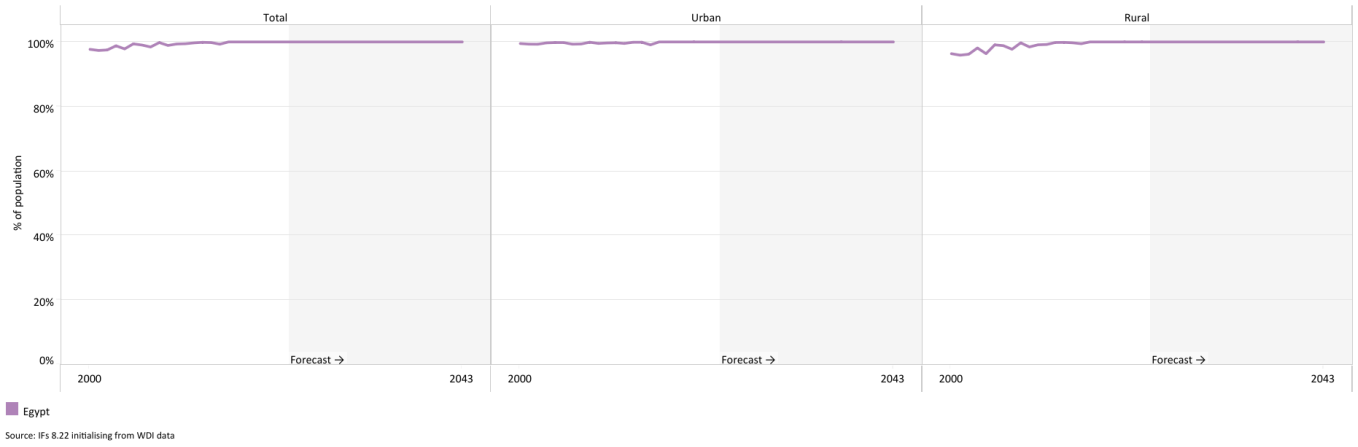
By 2043, Egypt's trade deficit in the Current Path will constitute about 3.7% of GDP, whereas, in the same year, the AfCFTA scenario will mitigate this situation leading to a slightly lower deficit of 2.6% of GDP. This is also below the average of 3.9 for its income peers in Africa. In the AfCFTA scenario, the sum of Egypt's exports and imports as a percentage of GDP will reach 43.1% by 2043. This will be about 5.9 percentage points above the Current Path but 7.4 percentage points below the average of lower-middle-income African countries.

These figures suggest that Egypt stands to benefit from the full implementation of the AfCFTA, which will improve

competitiveness, particularly in growing the country's manufacturing sector.

Large Infrastructure and Leapfrogging scenario

Chart 22: Electricity access: urban, rural and total in the Current Path, 2000-2043



Source: IFs 8.22 initialising from WDI data

Chart 22 presents the Current Path of access to electricity for the urban, rural and total population from 2000 to 2043.

The Large Infrastructure and Leapfrogging scenario involves ambitious investments in road and renewable energy infrastructure, improved electricity access and accelerated broadband connectivity. It emphasises adopting modern technologies to enhance government efficiency and the rapid formalisation of the informal sector, incorporating significant investments in major infrastructure projects like rail, ports, and airports while highlighting the positive impacts of renewables and ICT.

Visit the themes on Large Infrastructure and Leapfrogging for our conceptualisation and details on the scenario structure and interventions.

Modern infrastructure can improve productivity, augment healthy lifestyles, boost educational outcomes and facilitate government effectiveness. This study focuses on both physical and digital infrastructure, including roads, electricity access and ICT. Physical infrastructure, such as roads and railways, is a critical driver of economic growth and an important component of development. It facilitates the movement of people, goods and services, promotes intra-country trade and serves as an enabler of social service provision such as education and health.

According to the Africa Infrastructure Development Index (AIDI) of 2022, Egypt (with a score of 89.9) ranked second after Seychelles (96.73) in infrastructure development. AIDI consists of four composite indicators — transport, electricity, ICT and water supply and sanitation needs. Although Egypt has made significant strides in improving the quality and quantity of basic infrastructure, the country's infrastructure stock is limited and aged. The sector also faces low levels of investment. An Organisation for Economic Co-operation and Development report estimates that for the country to meet its investment gap, it would need to dedicate about 5% of GDP to this sector until 2040 to adequately improve its infrastructure connectivity. In light of rapid population growth and the accompanying demand, infrastructure development is an essential and critical aspect to enhancing productivity and sustainable long-term growth in Egypt.

Improved road transport will yield a range of economic benefits for Egypt. Recognising these potential benefits to expanded road transport, the government has made efforts through the National Roads Project launched in 2014 with the goal of improving transport infrastructure and creating a more modern Egypt. Since then, 4 800 km of the planned new roads have been constructed leaving 1 400 km that are currently being built. In addition, out of the existing 9 000 km of roads that needed improvement, 5 000 km have already been upgraded. The Nile River and Suez Canal are Egypt's major

transportation arteries, while the Suez Canal and Sumed Pipeline are important routes for Persian Gulf oil shipments. For instance, almost 10% of global trade, and 40% of European trade with the East, passes through the Suez Canal. By 2023, the total length of roads in Egypt has increased significantly from 64 000 km in 2000 to 160 352 km. Out of this, a whopping 155 330 km equivalent to 96.9% was paved—this is more than twice the average rate (43.7%) for lower-middle-income countries in Africa.

Beyond these, the government is undertaking major upgrades to highways, like the one connecting Cairo with the major Port of Alexandria, and the construction of a new tunnel link under the Suez Canal. International connections include the highway linking Egypt with its North African neighbours, as well as the highway running north-south via Asyut, Sohag, Luxor and Aswan to the border with Sudan. The Ministry of Transportation is also planning to establish a network of logistical areas and villages in Damietta, Sohag, 10th of Ramadan, Borg El Arab, Sadat and Beni Suef to promote industry and trade, increase investments and reduce logistical costs. Furthermore, the new road constructions and upgrades will reduce congestion given Egypt's fast-growing population, and together with new traffic rules, reduce traffic accidents. This will over time improve the human capital contribution to growth. On the Current Path, by 2043, the total road network in Egypt will increase to 287 770 km. By this time, all roads in Egypt will be paved roads which will be far above the 65.4% paved roads average for its income peers in Africa.

Owing to increasing electricity demand estimated at an average annual rate of 7%, Egypt has nearly tripled its installed capacity from 15 GW in 2000 to 42 GW by 2017. But even this increase has been insufficient to meet the high and rising demand to end electricity shortages in the country. Of the 42 GW installed capacity, 91% consists of fossil fuel-based technologies and approximately 8.6% are renewable energy technologies, 77% of which is hydropower. The country has largely developed all its major hydropower sites with little potential to expand further.

Nonetheless, Egypt has a relatively diverse energy mix and has seen significant investment in the sector, particularly after the 2011 revolution that saw increased generation capacity. In 2018, three new power plants came online to contribute an additional 14.4 GW to the country's power supply. In mid-2018, the government signed a deal to construct the Hamrawein coal-fuelled power plant expected to increase generation capacity by 6 GW. Most recently, Egypt has started the construction of the El Dabaa Nuclear Power Plant in Matrouh Governorate on the Mediterranean coast. The power plant will generate a total capacity of 4.8 GW. The first unit was expected to be commissioned in 2026. In July 2021, Egypt announced the postponement of the completion of the project to 2030 following a row with Russia about the GERD. However by August the deal was back on and Russia started equipment production for the plant.

As a result of these significant investments in electricity generation, Egypt is one of the few countries in Africa that has attained universal access to electricity although supply is not reliable. As early as 2016, the country had been able to achieve a 100% access rate meaning that all people in Egypt irrespective of their location have access to electricity. This universal access rate has been maintained since then and forecast to remain even by 2043. At this rate, electricity access rate in Egypt far exceeds the average for its income peers in Africa estimated to be 69.5% and forecast to reach 82.4% by 2043.

Egypt is looking to be a regional source of electricity over the next nine years, and the country is on track to generate an exportable surplus estimated at 74 GW by 2035. Moreover, the total installed capacity will increase to 83 GW by 2025. Thermal power will remain the dominant source of electricity at 82% followed by solar, hydro and wind contributing between 4% and 6%. Nuclear power will be introduced in this period, adding 1.2 GW to the total installed capacity by 2025, and ramping up to 4.8 GW by 2030.

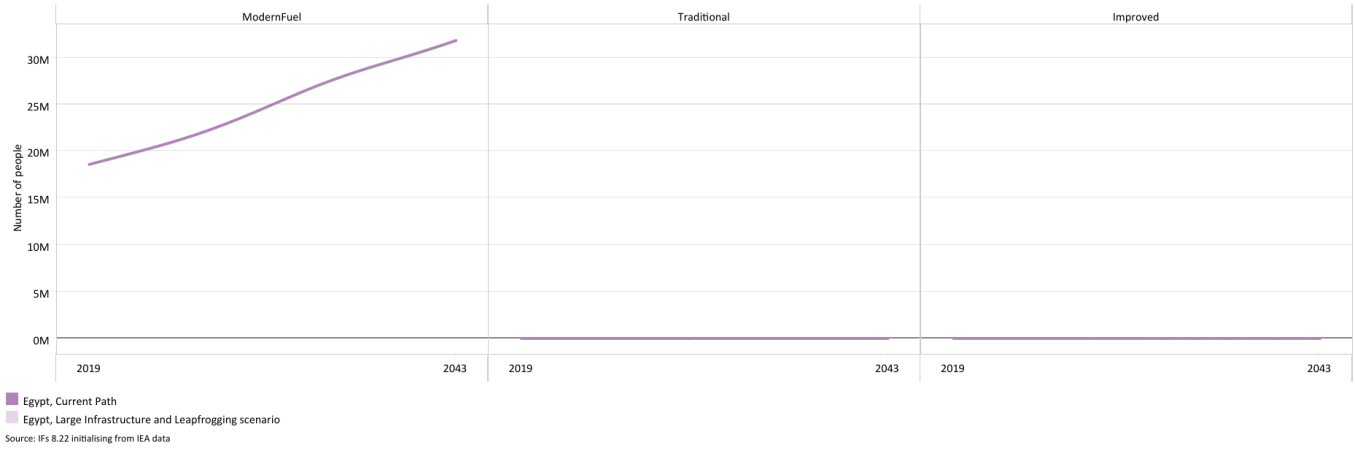
Due to falling costs for renewables, natural gas discoveries and environmental concerns over coal generation, the renewable energy sector will be the fastest growing energy segment between 2019 and 2028. Specifically, Egypt's non-hydropower renewable energy will be the fastest-growing market in the region. In 2018, the country's total installed capacity of renewables amounted to approximately 3.7 GW (2.8 GW of hydropower and 0.9 GW of solar and wind power).

According to the Integrated Sustainable Energy Strategy (ISES) by 2035, the government has set the renewable energy target to account for 20% of the electricity mix by 2022 and 42% by 2035. Total installed capacity from renewables is currently expected to reach 8.5 GW by 2028 with an average growth rate of 22.1% year on year (from 2019 to 2028).

Aside from physical infrastructure, technological advancement is essential for economic growth. Technology improves productivity and reduces the transaction costs and bottlenecks associated with doing business. A dynamic ICT sector is vital for a country that wishes to benefit from the digital economy. Egypt's government has long realised the benefit of ICT to its continued economic and social development and has over the years deregulated and liberalised the ICT sector while supporting multiple public and private entities. Egypt's Vision 2030 and 2050 consists of an ICT strategy towards a Digital Egypt under the Ministry of Communications and Information Technology (MCIT), which among other things is meant to streamline government services. Some of the key priorities for Egypt in this sector include expanding ICT infrastructure, strengthening the regulatory framework and growing a pool of labour skilled in ICT. It also includes achieving transition to a knowledge-based economy, ensuring cyber security, supporting research and development, and promoting Egypt's position at the regional and international levels in this sector. In 2020, the MCIT reported that Egypt's ICT sector grew by 15.2%. The sector's share of GDP rose to 4.4% (£108 billion) up from 3.8% (E93.5 billion) in 2019. The ICT sector exports also increased in 2020 to US$4.1 billion from US$3.6 billion in 2019, representing a 13% rise.

In 2023, the total number of fixed broadband subscriptions in the country was estimated at about 10.7 per 100 people—more than twice the average of 4.4 per 100 people in lower-middle-income Africa. In the Current Path, fixed broadband subscriptions will rise to 33.8 per 100 people by 2043, above the average of 22.7 subscriptions per 100 people for lower-middle-income African economies. In 2023, Egypt had a mobile broadband subscription rate of 77.8 per 100 people, higher than the average of 66.8 for lower-middle-income countries on the continent. On the Current Path, Egypt's progress in mobile broadband subscription will be slower compared to the average for its income peers. By 2043, mobile broadband subscriptions will rise to 145.5 per 100 people—slightly below the average of 148.4 per 100 people for its income-group peers. In terms of Internet usage, 53% of Egyptians' has access to the Internet and the average internet speed was 33.2 MB per second. This is higher than the average usage of 39.3% in lower-middle-income countries. On the Current Path, 43% of Egypt's population will have access to the Internet, above the average rates of 31.4% for its income-group peers in Africa. Owing to increasing demand, Egypt will need to grow its ICT capacity and inject more investments to improve the quantity and quality of services to enable the country to transition to the modern economy it envisions.

Chart 23: Cookstove usage in the Current Path and Large Infra/Leapfrogging scenario, 2019-2043

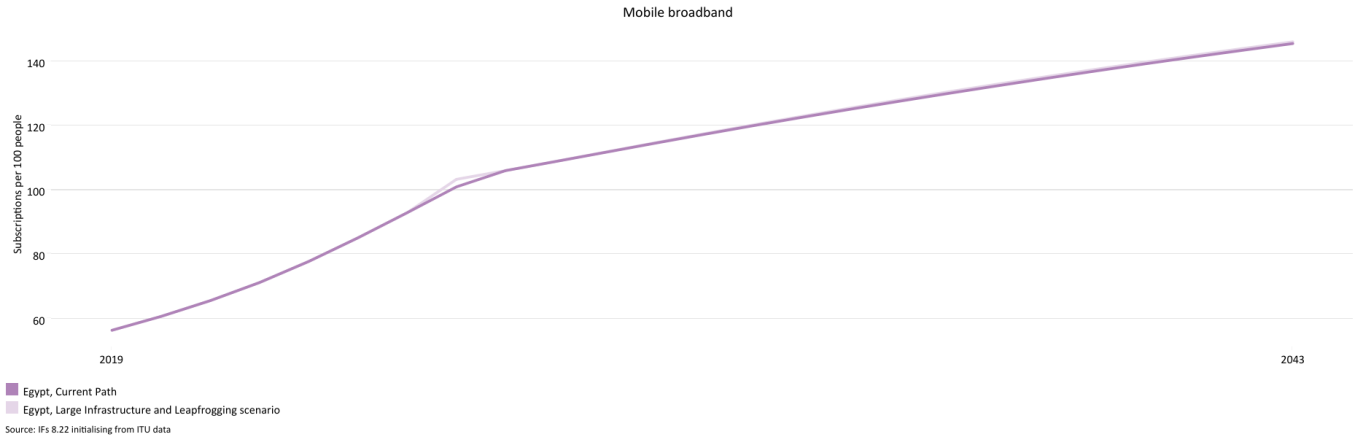


Source: IFs 8.22 initialising from IEA data

Chart 23 presents the number of people using cookstoves in the Current Path and in the Large Infrastructure and Leapfrogging scenario, from 2019 to 2043.

A major consequence of improved access to electricity is to cause people to switch from using traditional cooking such as firewood and charcoal to modern stoves. Our modelling distinguishes between three types of cookstoves: traditional, improved and modern. Due to the universal electricity access rate in Egypt, all households in the country used modern stoves for cooking as of 2023. This trend is forecast to continue on the Current Path up to 2043. As a result of this saturation effect, the Infrastructure scenario had no effect as no intervention was done for Egypt in respect of cookstove use.

Chart 24: Access to mobile and fixed broadband in the Current Path and Large Infra/Leapfrogging scenario, 2019-2043



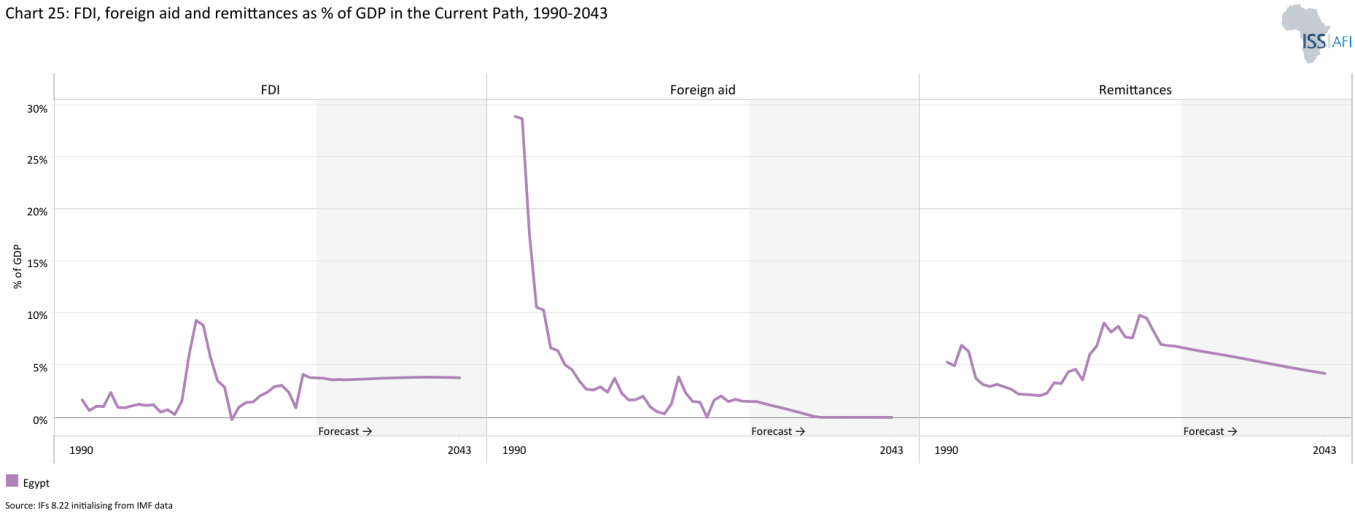
Source: IFs 8.22 initialising from ITU data

Chart 24 presents the percentage of the population and number of people with access to mobile and fixed broadband in the Current Path and in the Large Infrastructure and Leapfrogging scenario, from 2019 to 2043. The user can toggle between mobile and fixed broadband.

The Large Infrastructure and Leapfrogging scenario will lead to a larger increase in fixed broadband access, so that, by 2043, subscriptions will likely be at 50 per 100 people compared to 33.8 subscriptions on the Current Path. This will be more than twice the Current Path average of 22.7 for lower-middle-income African countries. Owing to the high performance in improving access to mobile broadband in the country, in the Current Path, reaching 145.5 subscriptions by 2043, the Large Infrastructure and Leapfrogging scenario has only a marginal impact to reach 146.0 subscription in the same period.

Financial Flows scenario

Chart 25: FDI, foreign aid and remittances as % of GDP in the Current Path, 1990-2043



Source: IFs 8.22 initialising from IMF data

Chart 25 presents the trends in FDI, aid and remittances in the Current Path as a percentage of GDP, from 1990 to 2043.

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

Visit the theme on Financial Flows for our conceptualisation and details on the scenario structure and interventions.

Egypt is one of the leading destinations of FDI in Africa, most of which goes to the oil and gas sector, followed by financial services, manufacturing, real estate and construction. Between 2001 and 2019, Egypt's net FDI inflows topped the continent and ranked third in comparison with other Arab countries. According to the UN Conference on Trade and Development (UNCTAD) 2024 World Investment Report, Egypt was the largest recipient of foreign direct investment (FDI) in Africa in 2023. Likewise, in the World Bank's 2020 report on Ease of Doing Business, Egypt improved its rank to 114 (out of 190) from position 120 in 2019. These achievements are mainly due to the implementation of several reforms as part of measures to create an enabling business environment and ease of doing business to attract foreign direct investment. Beginning in 2016, the government, with the support of the IMF, floated the local currency, introduced a value-added tax system, and implemented various laws on investment, bankruptcy, and capital markets. In addition, the country has also embarked on fiscal and monetary policy reforms such as broadening the tax base to achieve macroeconomic stability and inspire investor confidence in the economy.

However, there are still obstacles to trade and investment in the country. Despite signing international arbitration agreements, Egyptian courts do not always accept foreign judgments. Also, processes for settling commercial disputes are slow, with cases lasting an average of three to five years. In addition, the government is unwilling to add international arbitration clauses in its commercial contracts and agreements except for petroleum investment mega projects. This unfavourable environment discourages foreign investors from investing in the country. Other obstacles include excessive bureaucracy, corruption, non-tariff barriers, inadequate skilled labour, low access to credit, difficult customs procedures, and intellectual property issues.

FDI inflows to Egypt, like most countries in Africa, are historically low. In 1990, the total FDI inflow to Egypt was equivalent to a paltry 1.7% of GDP, above the average of 0.6% of GDP for lower-middle-income countries in Africa. By 2023, FDI inflows to Egypt reached 3.8% of GDP above the average of 2.6% of GDP for lower-middle-income African countries. Most

FDI goes to the oil and gas industry, although investments have been made in the non-oil economy as well as in telecommunication, consumer goods and real estate. In addition, Egypt has seen sizable foreign funding in major infrastructure projects. For example, Egypt's first nuclear project was set at US$25 billion, with most funding sourced from Russia. Investors from other countries like the Gulf Cooperation Council states, Asia (mostly China) and Europe are also investing in projects ranging from rail to oil. On the Current Path, FDI inflows will rise steadily to 3.8%—above the Current Path average of 3.2% for its income peers on the continent by 2043. Egypt is trying to attract more FDI to other sectors like manufacturing to diversify and improve the value content of its exports and improve productivity and labour market outcomes, and thus avoid its recurring growth slowdowns

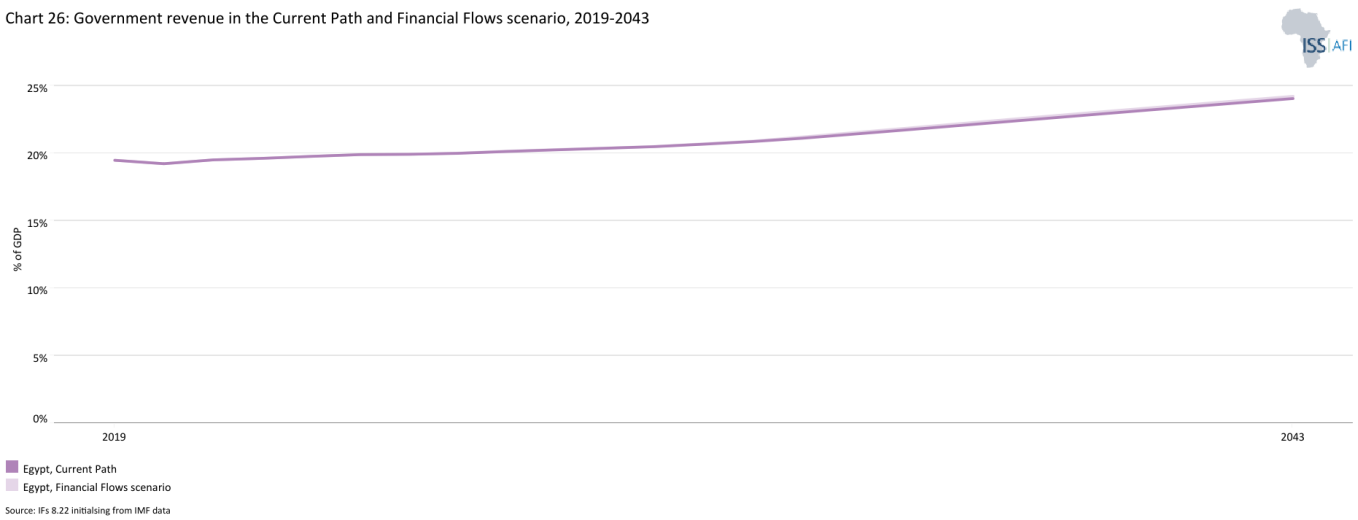
Typical of a developing economy, foreign aid to Egypt has significantly declined since 1990. In 1990, the total aid received by Egypt constituted 14.5% of GDP, compared to 6.5% received by other lower-middle-income African countries in the same period. By 2023, total aid as a percentage of GDP constituted a paltry 0.8%, equivalent to US$2.5 billion. This was less than half the average of 1.6% for other lower-middle-income countries in Africa. The main donor of foreign aid to Egypt over the years has been the US. For instance, in 2020, Egypt received a total of US$1.4 billion from the US, mainly from the U.S. Agency for International Development (USAID), Department of Agriculture and the U.S. Trade and Development Agency (USTDA). On the Current Path, foreign aid will decline further to negligible level of 0.01% of GDP, equivalent to US$92 million. This will be lower than the average of 0.8% of GDP for other lower-middle-income countries in Africa.

Remittances are the second largest source of income after labour income for Egyptian households. Historically, remittances in Egypt are high compared to its income-group peers in Africa. In 1990, Egypt received US$4.3 billion in remittances, constituting 5.3% of GDP, well above the average of 1.2% for lower-middle-income African countries. Since then, remittances to Egypt have grown rapidly. Indeed, between January and September 2020, Egyptian remittances increased by 11.6% compared to the previous year to reach US$22.1 billion based on figures from the Central Bank of Egypt. By 2023, total remittance constituted 6.7% of GDP equivalent to US$22 billion. At this rate, remittances to Egypt were almost twice the average rates for its income peers in Africa. This is not surprising given that Egypt is one of the leading labour exporting countries globally, and migrant remittances have been one of its main sources of external finance.

Most remittances are used for daily household consumption expenses which helps to alleviate poverty, improve the overall welfare of Egyptians. However, increased consumption can have a negative long-term impact on economic growth. As such, there is the need for the Government of Egypt to encourage its expatriate community to invest in the economy through the establishment of diaspora bonds, as done by countries such as Israel, India, Nigeria and Ethiopia.

On the Current Path, remittances to Egypt will increase to US$35.1 billion (4.3% of GDP), exceeding the average of 2.3% of GDP for lower-middle-income countries.

Chart 26: Government revenue in the Current Path and Financial Flows scenario, 2019-2043



Source: IFs 8.22 initialsing from IMF data

Chart 26 presents government revenue in the Current Path and in the Financial Flows scenario, from 2019 to 2043. The data is in US$ and % of GDP.

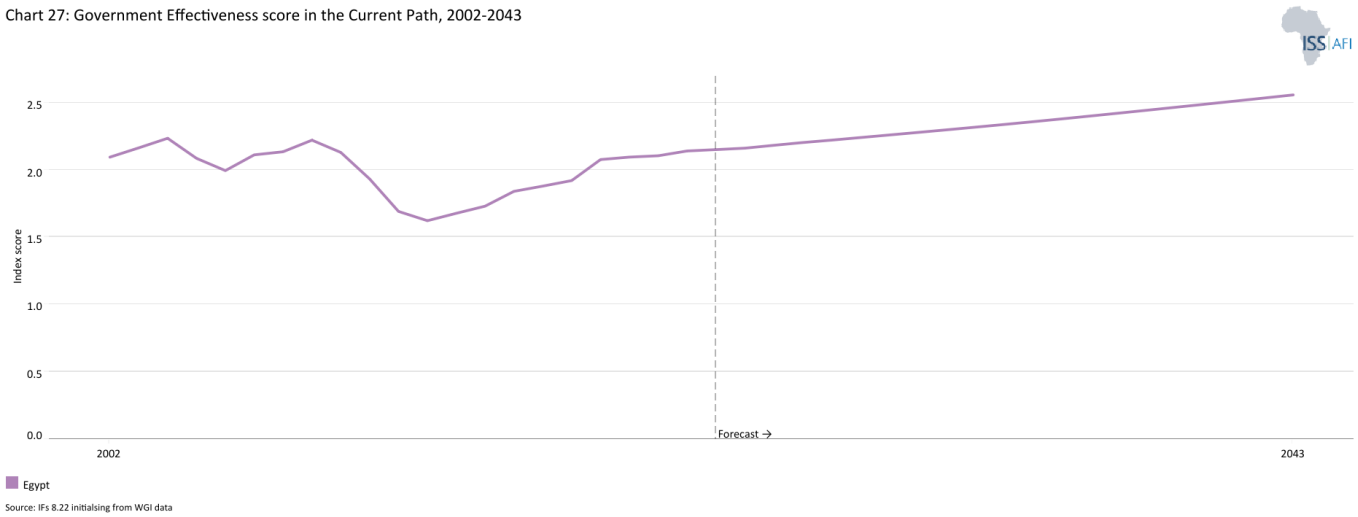
Wagner's law, or the law of increasing state activity, is the observation that public expenditure increases as national income rises. It is reasonable to expect that government revenues will increase as a per cent of GDP in the Financial Flows scenario compared to the Current Path.

Higher external inflows in the form of FDI, aid and remittances have increased government revenue. For instance, increased FDI means higher GDP growth, which in turn increases revenues accrued to the government through corporate and income taxes, royalties and indirectly through value-added tax. In 2023, the government's total revenue in Egypt amounted to US$64.6 billion, equivalent to 19.7% of GDP—higher than the average of its income-group peers in Africa. Similarly, Egypt's revenue without aid, estimated at 18.9% of GDP, is above the average of 9.7% for lower-income countries in Africa. This higher government revenue without aid reflect the strong state capacity in Egypt to mobilise revenue for development compared to its income peers in Africa.

In the Financial Flows scenario, government revenue will rise to US$210.0 billion in 2043, representing 24% of GDP above the average of 21.6% for lower-middle-income countries in Africa in the same year. Compared to the Current Path, the Financial Flows scenario will improve government revenue in Egypt by almost an additional US$11.3 billion by 2043.

Governance scenario

Chart 27: Government Effectiveness score in the Current Path, 2002-2043



Source: IFs 8.22 initialsing from WGI data

Chart 27 presents the Current Path of government effectiveness comparing the country to the average for the Africa income group, from 2002 to 2043.

This scenario models the effect of better governance: more stability, capacity, and inclusion. It measures a state's overall progress using the average of these three indices. To this end, it includes an index (0 to 1) for each dimension, with higher scores indicating improved outcomes.

Visit the theme on Governance for a full conceptualisation and details on the scenario structure and interventions.

Stability and better governance are generally prerequisites for other aspects of development as they ensure accountability, efficient allocation and distribution of state resources and encourage inflows of FDI. To emulate the sequential evolution of governance over time, our modelling draws on the establishment of nation states in the Westphalian tradition that first created a security community (through internal oppression and war with others), built capacity (largely through the collection of taxes and the establishment of a coercive social contract) and then, in time, became more inclusive and eventually, democratic. Traditionally, these transitions occurred sequentially with progress in one dimension providing a basis for the next.

The process of externally imposed state formation during colonialism in Africa did not follow this process. The result was that many African countries do not comprise a security community and have limited capacity. Yet, they are required to democratise without the fundamentals of sufficient security and capacity being in place.

The composite 'governance triangle' in IFs measures a state's progress using the average of these three indices. To this end, it includes an index (0 to 1) for each dimension, with higher scores indicating improved outcomes.

Egypt's performance on the governance security index is marginally better than that of its peers on the continent. Its score of 0.74 for 2023 was 3.7% higher than the average of 0.71 for lower-middle-income countries in Africa. Despite the general improved security, the country suffers from periodic terrorist attacks. Since 2013, the Wilayat Sina (WS) which is part of the self-declared Islamic State and other terrorist groups have carried out several attacks in the country. These attacks continue to threaten the territorial control of the government especially in places such as the northern Sinai and Western Dessert. However, the increased counter offensives initiative by the security forces in Egypt is contributing to a reduction

in these attacks. For instance, the number of terrorist attacks has fallen from the 158 recorded in 2017 to 42 in 2021. Consequently, the number of victims from these attacks has also declined to 158 in 2021 instead of 695. Although in January 2023, the President declared that the country has won the fight against terrorism in Sinai, it is important that the underlying root causes of terrorism in the country are addressed in addition to the militarised approach. Additionally, in 2023/4 the Israel-Hamas conflict resulted in heightened geopolitical tensions in the region.

On the Current Path, Egypt's score on the governance security index will reach 0.76 on par with average for lower-middle-income African countries, by 2043.

Regarding governance capacity, Egypt's score in 2023 of 0.39 was 20.4% higher than the average of lower-middle-income Africa. The most important reason is that government revenue as a percentage of GDP for Egypt (without aid) was 18.9% of GDP, exceeding the average of 9.7% of GDP for its income group countries in Africa. On the Current Path, Egypt's progress on the governance capacity index will be better than the average for its income-group peers such that by 2043, its score of 0.48 will be 24.2% more than the average for lower-middle-income countries in Africa.

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'. The country's performance on the World Bank government effectiveness index is better than its peers historically. Egypt's score of 2.2 in 2023 was 13% higher than the group average. On the Current Path, this trend will continue so that by 2043, Egypt's score on government effectiveness will be 10.9% higher than the group average for lower-middle-income countries in Africa.

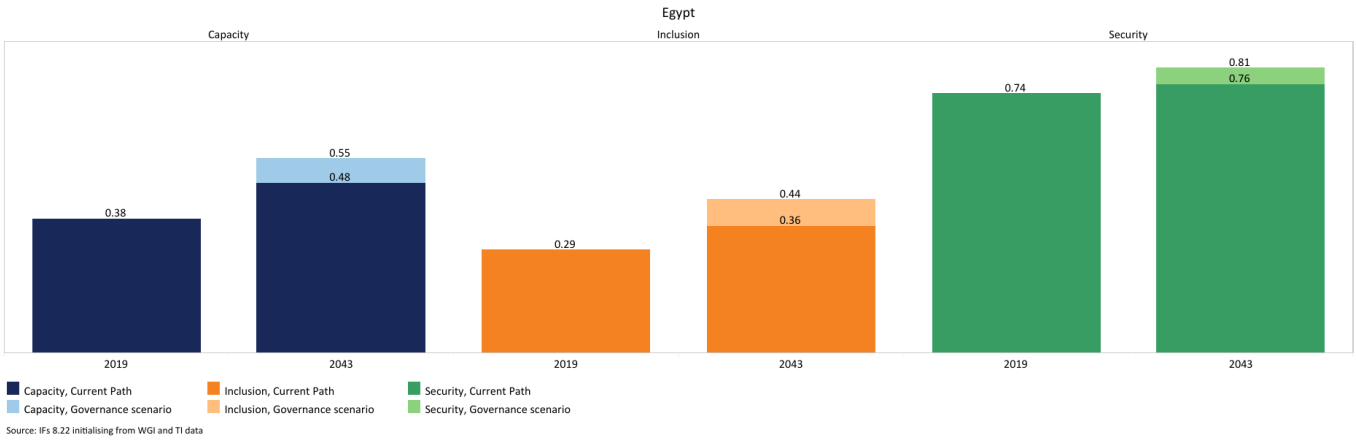
When it comes to corruption, Egypt ranks 108th out of 180 countries with a score of 35 out of 100, according to Transparency International's 2023 Corruption Perceptions Index. Compared to its North African neighbours, Egypt is more corrupt than Tunisia, Morocco and Algeria. Corruption permeates every state institution in the country, creating mistrust among the public. Nepotism, favouritism and extensive corruption continues to undermine rule of law in the country. Baksheesh (meaning payment — such as a tip or bribe — to expedite service) remains a huge challenge to the economy and investment. In spite of the fact that Egypt's Penal Code criminalises several forms of corruption, legislation is unevenly enforced, leading government officials to act with impunity, most prominently in procurement. This high level of corruption weakens government effectiveness in the country.

Egypt has seen little progress in combating corruption despite the repeat pledge by President Al-Sisi to do so. For instance, during the implementation of Egypt's second national strategy on combating corruption (2019-2022), only a few people were charged and prosecuted. Also, there is a perception that prosecutions are targeted at people who have lost favour with the current regime.

While it has relatively high levels of security and capacity, Egypt's performance on the Governance Inclusion Index is lower than its income-group peers in Africa. In 2023, Egypt scored 0.31 on the inclusion index, which was about 56% lower than its income-group peers on the continent rated at 0.48. Egypt's democracy score on the Polity index ranks 21st out of the 24 lower-middle-income countries in Africa, only higher than Cameroon, Congo and Eswatini. Indeed, by 2043, Cameroon will overtake Egypt so that Egypt's score by then will only be better than Congo and Estwatini. The level of trust in the government's political and administrative system is low, and the government's inability to deliver on major socio-economic issues for the population is slowly making its supporters passive and emboldening the stance of those opposed to the regime. Generally, there is no effective separation of powers and checks and balances in the country as the executive controls and influences most institutions. According to the Bertelsmann Stiftung's Transformation Index the judiciary has witnessed significant changes since the events in Egypt that accompanied the Arab Spring. It was placed under strict presidential control which undermined its independence to dispense justice without fear or favour. The legislature too has changed, now largely without proper checks and balances of the executive powers while local and regional executives are also under the control of the president.

The country also currently ranks 20th out of the 24 lower-middle-income countries on the economic freedom index by the Fraser Institute with its scores higher than only Angola, Congo, Zimbabwe and Algeria. By 2043, its score will deteriorate to 21st position being overtaken by Angola. In terms of gender empowerment, Egypt ranked 19th out of the 24 lower-middle-income countries on the UNDP gender empowerment index in 2023. In 2021, the country was ranked 129th out of the 156 countries on the Global Gender Gap Index. Women in Egypt, although highly educated, face limited economic opportunities. Currently, estimates show that women labour force participation stands at only 20% as opposed to 75% for men. On the Current Path, Egypt will still lag behind so that by 2043 the country's score on the Governance Inclusion Index of 0.36 will still be 46.5% below the average of lower-middle-income countries in Africa. Egypt is significantly less democratic than expected given the level of education and income of its large population, and also suffers low levels of gender equity

Chart 28: Composite governance index in the Current Path and Governance scenario, 2019-2043



Source: IFs 8.22 initialising from WGI and TI data

Chart 28 presents the composite governance index for the Current Path versus the Governance scenario from 2019 to 2043.

Egypt's score on the composite governance index of 0.48 in 2023 was 5.6% lower than the average for its income peers in Africa. This relatively lower score on this index is mainly due to its poor performance on the governance inclusion which consists of indicators such as democracy and gender empowerment. In the Governance scenario, Egypt's score on the composite governance index will improve to 0.60, which is about 12% above the Current Path by 2043 and about 7.4% above the Current Path average of lower-middle-income Africa in the same year.

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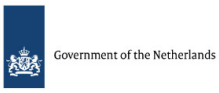

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