Mali

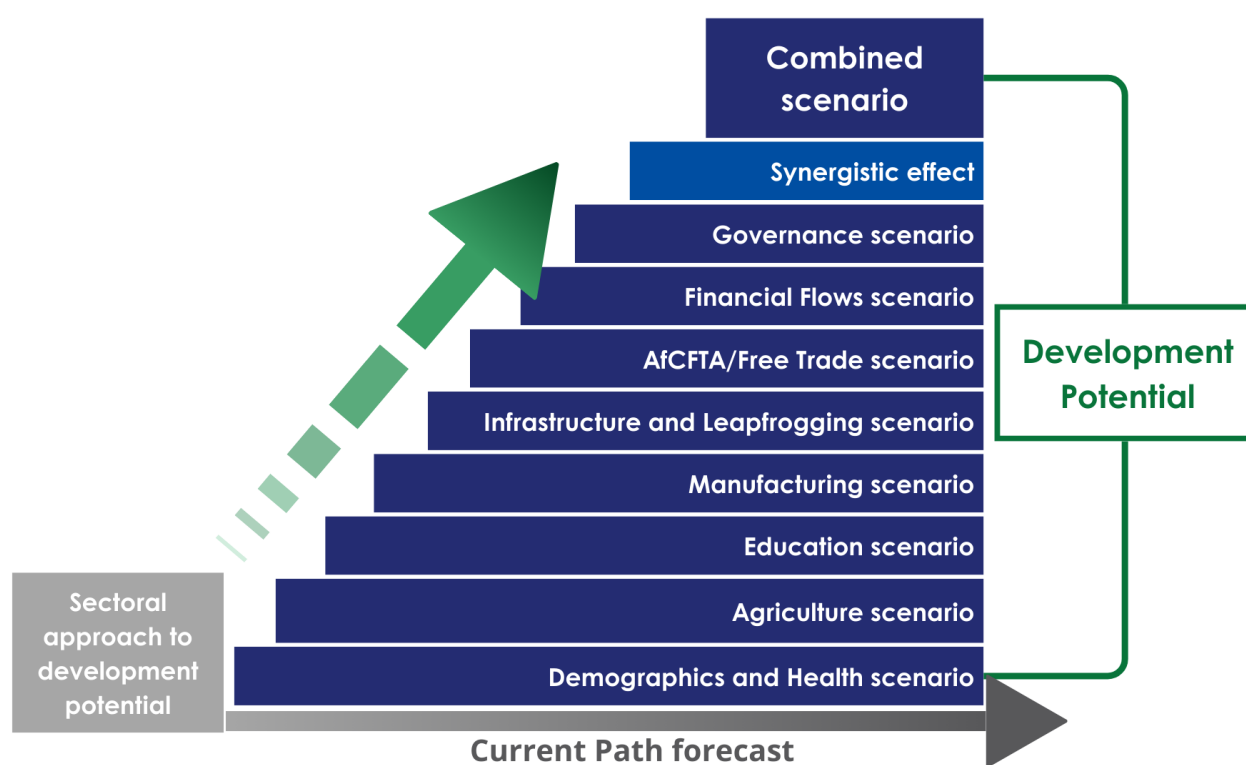## Mali: Scenarios

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Relationship between scenarios
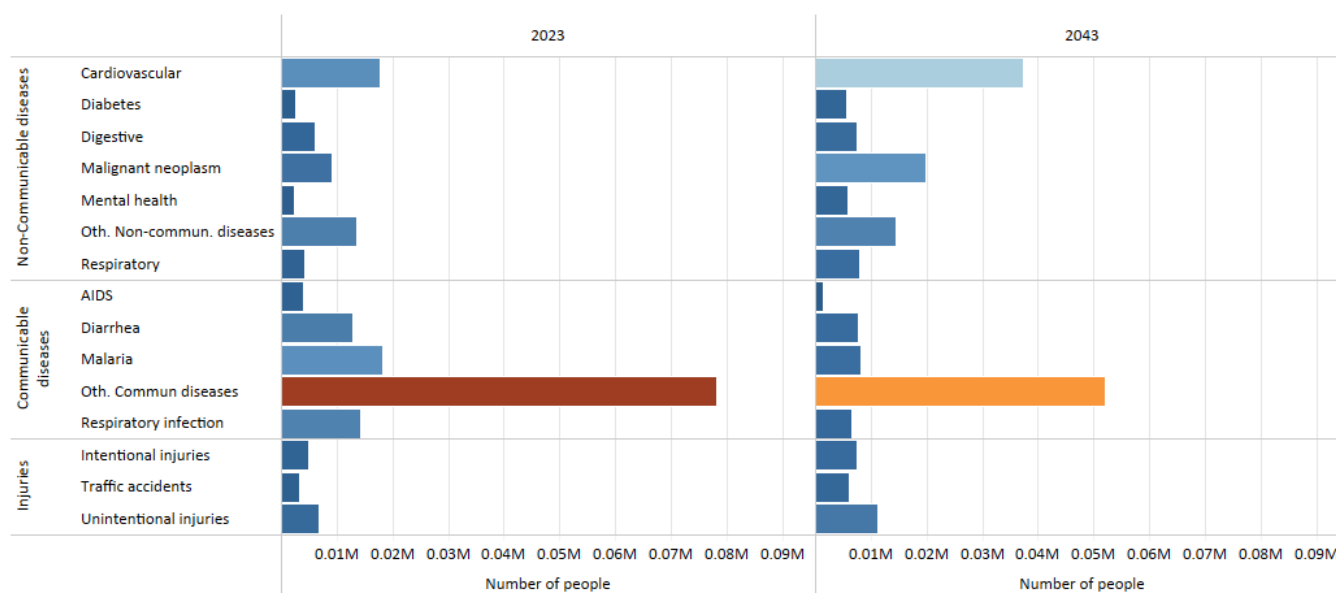
Chart 9: Relationship between Current Path and scenarios

The eight sectoral scenarios as well as their relationship to the Current Path and the Combined scenario are explained in the About Page. Chart 9 summarises the approach.

Demographics and Health scenario

Chart 10: Mortality distribution in the Current Path, 2023-2043

Source: IFs 8.34 initialising from IHME data

Chart 10 presents the mortality distribution in the Current Path for 2023 and 2043.

The Demographics and Health scenario envisions ambitious improvements in child and maternal mortality rates, enhanced access to family planning, 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.

Mali's health sector has made significant progress in recent years, although several challenges remain. For instance, expanding the healthcare infrastructure and placing medical personnel in rural regions have increased access to high-quality healthcare services in Mali. The Malian National Statistics Office (INSTAT) and ICF (2019) report notes improvements in maternal and child health outcomes, including decreased maternal mortality rates and increased vaccine coverage. A 2020 World Health Organization study emphasised the need to strengthen disease surveillance and response systems to effectively manage and prevent outbreaks. It also stressed the importance of improving healthcare infrastructure, expanding access to hygienic conditions, and ensuring clean water to prevent the spread of infectious diseases.

The country faces various health challenges due to its inadequate healthcare infrastructure, however. Malnutrition, exacerbated by the security crisis, is widespread, particularly among children, with around 21% of children under five years old classified as underweight. Mali's infant, child and maternal mortality rates continue to be among the highest in sub-Saharan Africa. This is mainly due to the poor availability and uptake of family planning in the country, early childbearing, high rates of female genital mutilation, infrequent use of skilled birth attendants and a paucity of emergency obstetrical and neonatal care. Furthermore, the country also has one of the lowest densities of healthcare workers,

especially in the rural areas, limiting its capacity to provide essential health services. Like many African countries, Mali has historically experienced high mortality rates from communicable diseases. Persistent challenges include high maternal and child mortality, the world's highest adolescent fertility rate, low child immunisation coverage and widespread malnutrition. The country also faces a significant burden from infectious diseases such as tuberculosis, malaria and diarrhoea, while the prevalence of non-communicable diseases is on the rise which are typically more expensive to treat.

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. In 1990, communicable diseases caused about 121 000 deaths—representing about 75% of total deaths in that year. This was followed by non-communicable diseases that caused 32 600 deaths (20.2% of total deaths) and injuries that caused 7 710 deaths (4.8% of total deaths). By 2023, deaths from communicable diseases had steadily declined to 127 360, although this was still 64.4% of all deaths. Deaths from non-communicable diseases and injuries rose to 55 500 (equivalent to 28.1% of all deaths) and 14 800 (equivalent to 7.5% of all deaths), respectively. According to the WHO, the leading causes of death in Mali include malaria, lower respiratory infections, diarrhoeal diseases, preterm birth complications, birth asphyxia and birth trauma, stroke and Ischaemic heart disease. Indeed, malaria alone caused 88 500 deaths in 2021 followed by lower respiratory infections with 83 800 deaths.

On the Current Path, this trajectory will continue till about 2039 when Mali is projected to achieve its epidemiological transition: the point where deaths from non-communicable diseases outweigh deaths from communicable diseases. By 2043, non-communicable diseases will be the highest cause of death in Mali causing 98 750 deaths in the country (about 49.5% of all deaths). The transition to deaths from non-communicable diseases as the main cause of mortality will inevitably increase health sector costs as they are more expensive to treat. By then, deaths from communicable diseases will rapidly decline to 75 980, constituting 38.1% of all deaths, while deaths from injuries will constitute the remaining 12.4%.

Access to improved, safe and treated water, such as piped water, and proper sanitation is crucial in preventing the spread of communicable diseases. Poor water sources and inadequate sanitation are linked to diseases such as diarrhoea, which disproportionately affect children. It is estimated that over 20% of deaths in Mali are attributed to poor water, sanitation and hygiene (WASH) conditions. Many wells remain uncovered and untreated, posing contamination and health risks.

Mali has implemented various initiatives to ensure access to hygienic facilities and clean water, particularly in urban areas. Organisations like World Vision are actively working to address Mali's water and sanitation challenges. Their efforts include drilling new boreholes to ensure reliable access to clean water, conducting community programs that raise awareness about good hygiene practices. Despite these efforts, Mali continues to face significant challenges in water supply and sanitation due to the uneven distribution of water resources across the country, making access difficult, particularly for rural populations. This situation negatively impacts public health, especially among vulnerable groups such as children.

Mali has made significant advancements towards the attainment of SDG 6.1 of universal access to safe drinking water. In 2023, 20.7 million Malians (constituting 86.9% of the population) had access to improved water supply. Out of this, 12.1 million people (about 50.8% of the population) had access to a piped water supply in the country. On the Current Path, Mali's progress will lag as the population with access to improved water will be 87.1% in 2030, meaning that the country will miss the SDG target in this area. By 2043, access to improved water will increase to about 90.5%, of which piped water will constitute almost 55% of connections.

Regarding sanitation, about 5.9 million Malians (47.9% of the population) had access to improved sanitation in 2023, twice the average for its income-group peers in Africa. At 16.7%, the share of the population with access to shared sanitation is slightly above the average of Africa's low-income group of 15.%. This means that more than one-third of the Malians resort to unimproved sanitation including inadequate waste management and the absence of proper toilet facilities, which poses major health and environmental risk to the country. On the Current Path, the proportion of the population with improved

access to sanitation will rise to 50.3% in 2030 and 60.1% by 2043. This means that Mali will lag behind in achieving SDG target 6.2 of ensuring access to adequate and equitable sanitation and hygiene for all and an end to open defecation. Consequently, the share of the population with unimproved sanitation access will fall to 32.9% in 2030 and 24.4% in 2043 while the use of shared sanitation will constitute 16.8% of the population in 2030 and 15.5% by 2043.

Chart 11: Infant mortality rate in the Current Path and Demographics and Health scenario, 2020-2043

Mali, Current Path
Mali, Demographics and Health scenario
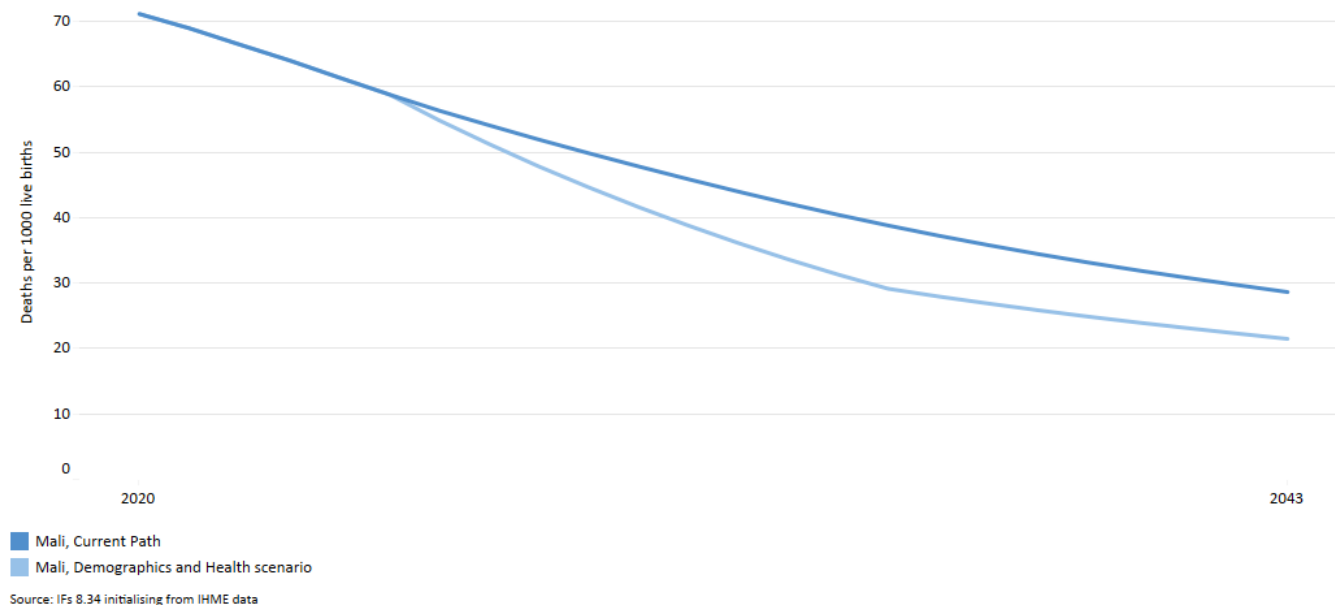
Source: IFs 8.34 initialising from IHME data

Chart 11 presents the infant mortality rate in the Current Path and in the Demographics and Health scenario, from 2020 to 2043.

The infant mortality rate refers to the probability that a child born in a specific year will not survive to their first birthday. 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.

In 2023, the infant mortality rate in Mali was 64.1 deaths per 1 000 live births—a drop by more than half of the rate in 1990. However, this was 47.6% higher than the average of 43.4 deaths for low-income countries in Africa. The major causes of infant mortality in Mali include preterm birth which constitutes 30% of all deaths, neonatal asphyxia constitutes 28% of deaths and sepsis/tetanus constitutes 21% of deaths. Other causes include acute respiratory infections and congenital anomalies.

There is a disparity in infant mortality in Mali as babies born in rural areas and poorer households are less likely to survive. For instance, the UNICEF estimates show that Mali records 38 deaths per 1 000 live births for babies born in rural areas compared to 27 deaths per 1 000 live births for babies born in urban centres. Similarly, poorer households record 39 deaths per 1 000 live births of babies compared to richer households that record 30 deaths. The disparity largely reflects access to improved healthcare services for richer and urban households which are usually not available to poorer and rural households. Another important factor explaining the disparity in infant mortality is the educational attainment of the mother. Estimates show that children born to less educated mothers in Mali are 2.1 times less likely to survive during their first month compared to those born to educated mothers. This highlights the urgent need for Mali to invest in girls' education to help reduce these preventable deaths.

On the Current Path, the infant mortality rate will decline further, reaching 47.8 and 28.6 deaths per 1 000 live births by 2030 and 2043, respectively. It means that Mali will fall short of achieving the SDG target of 12 deaths per 1 000 live births even by 2043 and is only lieklety to achieve this by 2066 in the Current Path.

The Demographics and Health scenario will reduce Mali's infant mortality rate to 41 deaths per 1 000 births in 2030 and 21.5 deaths per 1 000 births by 2043. This is seven deaths fewer than in the Current Path and two fewer deaths than the Current Path average of low-income countries in Africa in 2043. Although this does not meet the SDG target, it pushes Mali close to the SDG target emphasising the need for the country to invest in access to improve healthcare service.

Chart 12: Demographic dividend in the Current Path and the Demographics and Health scenario, 2020-2043

Source: IFs 8.34 initialising from UNPD Population Prospects data
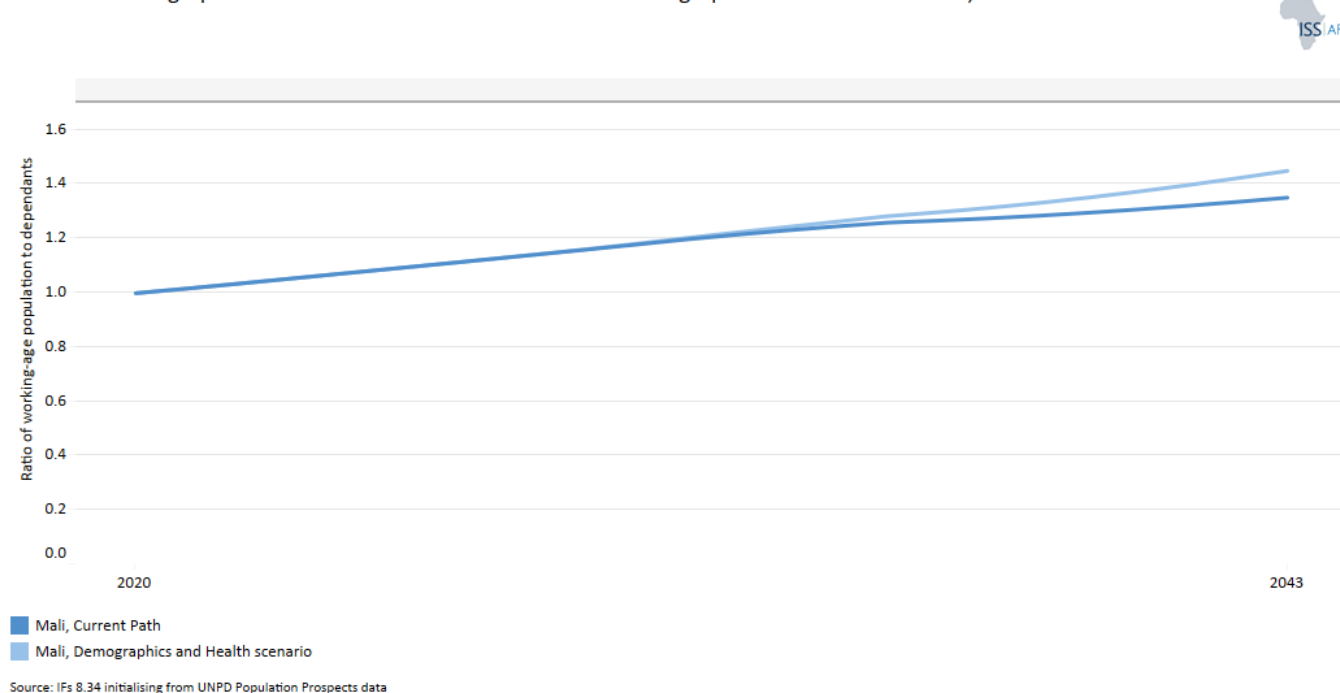
Chart 12 presents the demographic dividend in the Current Path and in the Demographics and Health scenario, from 2020 to 2043.

The dividend is the window of economic growth opportunity that opens when the ratio of working-age persons to dependents increases to 1.7 to 1 and higher.

We explain the different conceptualisations relating to a demographic dividend in a separate theme.

The demographic dividend is the economic growth generated by changes in the population structure. It generally materialises when the ratio of the working-age population to dependants is at least 1.7 to one, meaning that for every dependant, there are 1.7 persons of working age. 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 Mali was one to one, which means that on average, for every dependant in Mali, there was only one person of working age (15–64 years of age). This is lower than the 1.2 to one average for low-income countries in Africa. The high dependency rate in Mali can be attributed to the high fertility rate as discussed previously. On the Current Path, Mali will likely not achieve the minimum ratio of 1.7 working-age persons for each dependant required for the materialisation of the demographic dividend, or demographic gift, even by 2043. Indeed, based on the Current Path, Mali is likely only to achieve this minimum ratio by 2059.

The Demographics and Health scenario pushes the country close to this target such that by 2043, the ratio of the working-age population to dependants will be 1.5 to one in the scenario instead of the 1.3 to one as in the Current Path (on par with the average for its income-group peers in Africa by 2043). This underscores the importance of investing in education and expanding decent opportunities for Mali's growing population, to ensure that demographic trends contribute positively to inclusive and sustained growth.

Agriculture scenario

Chart 13: Crop production and demand in the Current Path, 1990-2043
Area chart show demand less production

Legend: ■ Agricultural demand ■ Agricultural production

Source: IFs 8.34 initialising from FAO food balance sheets data
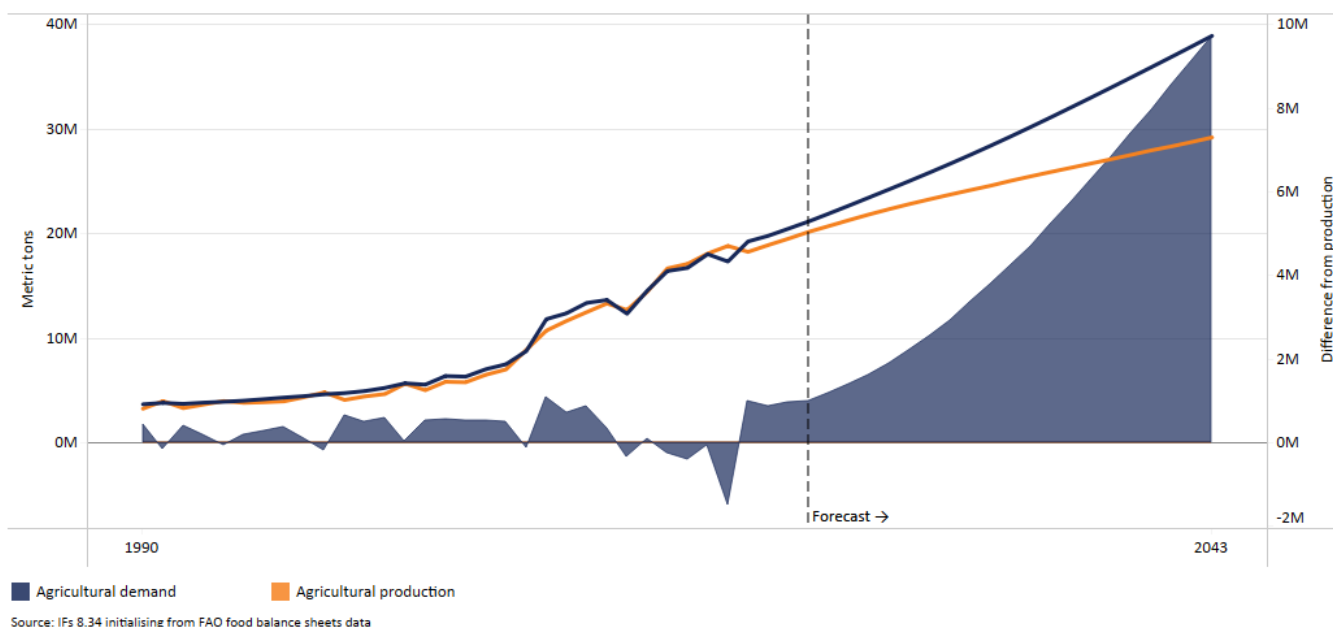
Chart 13 presents crop production and demand in the Current Path from 1990 to 2043.

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.

Mali has ideal circumstances for agricultural development as it has a sizable area of arable land and an abundance of water supplies from the Niger and Senegal rivers. Agriculture and agro-pastoralism are the main economic pillars of Mali: nearly 80% of Malians work in the agriculture sector. According to the International Trade Administration (ITA), the Malian government dedicates about 12% of its national budget to the agricultural sector and subsidises cotton. Cotton is one of Mali's essential agricultural products, accounting for a significant portion of its exports. Other agricultural commodities, such as rice, corn, millet, sorghum and wheat, make up the majority of Mali's agricultural output.

Over the years, the government has made efforts to improve agricultural productivity by encouraging foreign and national private investors to undertake agricultural activities in the lands of the Office du Niger (an irrigation scheme). In addition, the government has been investing in irrigation infrastructure, aiming to enhance water accessibility and to minimise the impact of climate change. Government and NGO training programmes and extension services connect farmers to contemporary agricultural methods, enhanced seed varieties, effective water management strategies and financial access. Also, through funding, rural infrastructure and fostering integration with regional and global markets, efforts are being undertaken to increase market access.

Nonetheless, the sector is confronted with numerous challenges. Although the country has important and underexploited agricultural potential, especially in the southern and central regions, climate change and vulnerability to droughts and desertification pose significant threats to agricultural productivity and food security. The sector's potential for growth is also hampered by a lack of infrastructure, including storage facilities, irrigation systems and transportation, making it difficult for farmers to access markets and avoid post-harvest losses. Furthermore, traditional farming practices and a lack of access to modern technology and high-quality inputs like seeds and fertiliser continue to result in low output.

In 1990, Mali's average crop yield of 1.7 metric tons per hectare was 36% higher than the average of 1.3 tons for its income-group peers in Africa. However, by 1996, the average yield per hectare in Mali had fallen below its income-group peers in Africa. The decline can be attributed to changing weather patterns, especially since agriculture production in the country is rainfed and, thus, susceptible to climate change. This trend continued except for 2016 and 2017 when Mali overtook its income-group peers in Africa. By 2023, the average crop yield per hectare of 2.6 metric tons in Mali was 8.9% lower than the average of low-income countries in Africa. This ranks Mali 13th in the low-income group but equates to less than half the yield per hectare in Rwanda and Malawi. On the Current Path, yield per hectare will rise to 2.9 and 4 metric tons per hectare by 2030 and 2043 respectively—still below the average of low-income African countries.

Total agriculture production[1] in 1990 stood at about 4 million metric tons. Of this, 3.3 million metric tons, representing 82.5%, were crops, with the remainder constituting meat production. By 2023, total agricultural production had grown to 21.7 million metric tons. Of this, crop production constituted about 93%, equivalent to 20.2 million metric tons, meat production 6.5%, and fish production constituted the remainder of the total production. Mali faces also huge agriculture loss and waste estimated at 30.3% of total production. This is largely due to post-harvest losses for crops, estimated at 10.3% of production. Such losses are a result of pest and disease infections, spoilage and the lack of adequate and effective storage facilities. Transmission losses for crops, which are mainly due to poor transportation networks also accounts for 16.6% of production.

In terms of demand, the total demand for agricultural products in Mali has always been more than the total production. Total demand stood at about 4.5 million metric tons in 1990, of which 3.7 million metric tons, equivalent to 83% of total demand, were for crops. The remaining demand was for meat (685 000 tons) and for fish (73 000 tons). Comparing this to the total production (about 4 million metric tons) in the same year reveals that Mali had excess demand for agricultural products in that year of about 490 450 metric tons. Since then, domestic demand has rapidly outgrown production, and by 2023, agricultural demand exceeded domestic production by 1.2 million metric tons, despite the increase in production. Of the total demand of 22.9 million tons, 92.4% is for crops (21.2 million tons). The remaining demand is mainly for meat (1.5 million tons), and the lowest demand is for fish (240 000 tons).

Despite the projected increase in domestic production, reaching 25.9 million metric tons in 2030 and 33.3 million metric tons in 2043, it will not be enough to meet domestic demand that will rapidly grow to 29.2 million metric tons and 37.6 million metric tons in the same period, respectively. As a result, excess demand for agricultural products will reach 3.2 million metric tons in 2030 and 10.4 million by 2043. This highlights the need for strengthened efforts to enhance domestic agricultural production, as Mali may face growing pressure on food security in the future if current trends continue. The World Bank estimates that about 1.4 million people faced severe food insecurity between June and August 2024. Notwithstanding this expected rising food insecurity, many agricultural subsectors, including biofuels, shea butter, mangoes, peanuts and cashews, are still entirely untapped and present a unique opportunity for investors. Modernising Mali's poultry and cattle production and transformation industries also serve as potential avenues for improvement and growth.

Chart 14: Import dependence in the Current Path and Agriculture scenario, 2020-2043

Source: IFs 8.34 initialising from FAO Food Balance Sheets data

Legend:
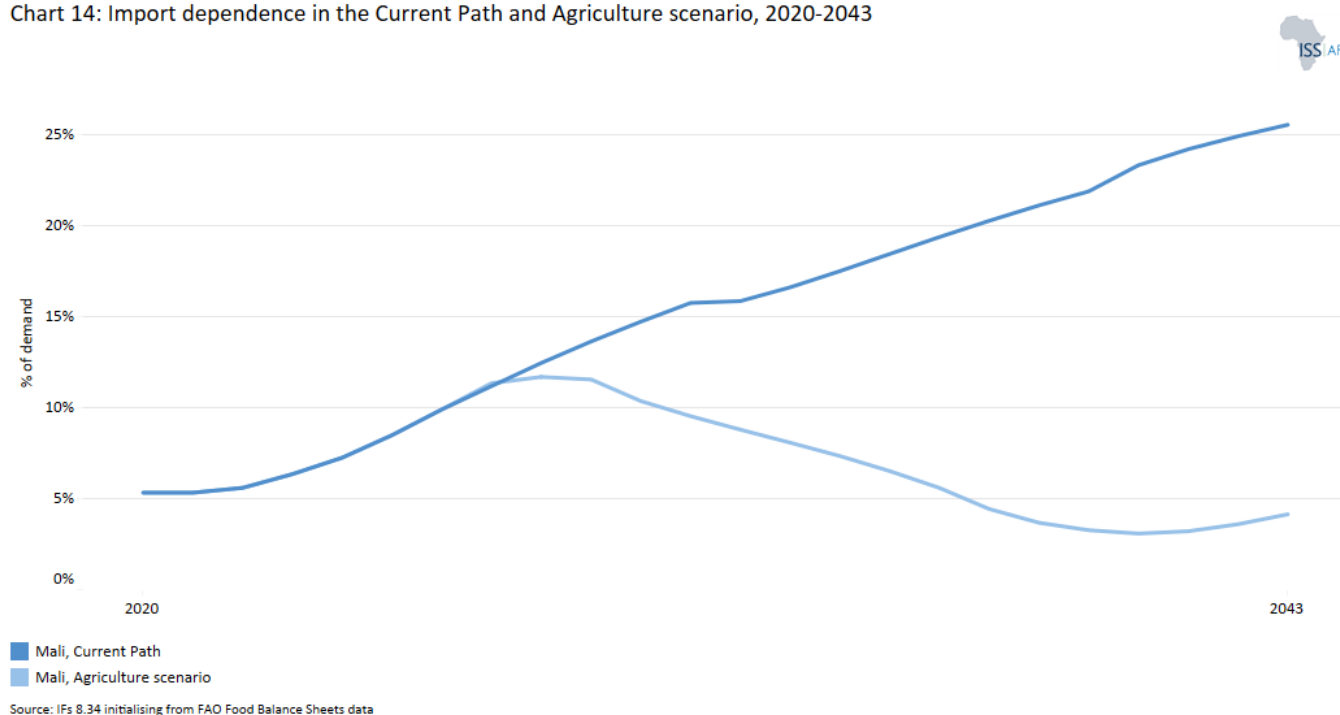- Mali, Current Path
- Mali, Agriculture scenario

Chart 14 presents the import dependence in the Current Path and the Agriculture scenario, from 2020 to 2043.

With total agricultural demand outgrowing domestic production, Mali is likely to rely on imports to meet its domestic demand. In 2023, Mali's net import of crops stood at 1.4% of total crop demand, which was less than the average of 9.1% for low-income countries in Africa. In the Current Path, net crop imports will grow rapidly in Mali to 14.8% and 26.2% of total crop demand by 2030 and 2043, respectively. This suggests a growing level of national food insecurity; however, it can also be as a result of changes in dietary preferences among Malians.

In the Agriculture scenario, yield per hectare will increase to 5.4 metric tons by 2043—a 35% improvement compared to the projections of the Current Path and the average of low-income countries in Africa. The improvement in yields will lead to an improvement in total agricultural production. In the Agriculture scenario, total crop production will increase to 26.2 million tons, almost 2.5 million metric tons, or 10.5%, more than the Current Path by 2043. By 2043, crop production in Mali will rise by 32.2% over the Current Path to 38.6 million tons in the Agriculture scenario by 2043. The projected increases in crop production in the Agriculture scenario reduce the import dependency of crops in the country compared to the Current Path. By 2030, the net import of crops will decline to 10.2 in the Agriculture scenario instead of 14.8% in the Current Path. This reduction in import dependence will continue so that by 2043 net crop import will be 3.4% of total demand far below the projected Current Path average of 26.2%. This implies that Mali has the potential to reduce its food import and become food-sufficient if significant steps are taken to revamp the agricultural sector.

Efforts towards improving yield per hectare such as the adoption of modern technology, improved seed, fertiliser and expanded irrigation facilities as well as provision of storage facilities can improve agriculture potential of the country.

Education scenario

Chart 15: Progress through education funnel in the Current Path, 2023-2043

	2023	2043
Primary gross enrolment	83.9%	95.5%
Primary completion	58.8%	81.2%
Lower secondary gross enrolment	50.3%	71.6%
Lower secondary completion	34.1%	48.4%
Upper secondary gross enrolment	25.9%	42.6%
Upper secondary completion	13.4%	32.8%
Tertiary gross enrolment	6.8%	18.1%
Tertiary completion	4.8%	9.1%

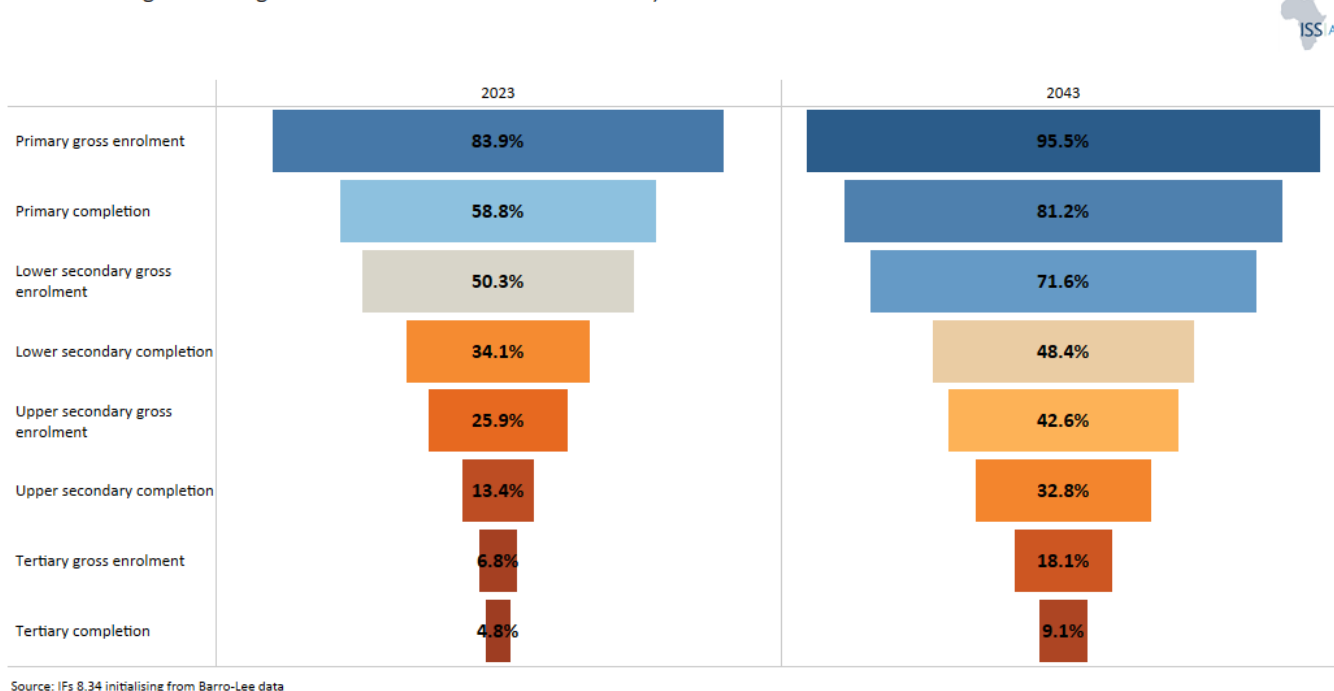Source: IFs 8.34 initialising from Barro-Lee data

Chart 15 depicts the progress through the educational system in the Current Path, for 2023 and 2043.

The Education scenario represents reasonable but ambitious improvements in 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.

Mali has a 6-3-3 education system, which consists of six years of elementary education, three years of lower-secondary school and three years of upper-secondary education. Like many countries in the region, Mali allocates a significant share of its resources to education. However, outcomes remain uneven, in part due to systemic inefficiencies and challenges related to governance and accountability within the sector. The Malian government's spending on education is boosted by support from non-governmental and international organisations. For example, the Global Partnership for Education provides the country with financial assistance and technical support to improve its education system.

The education system can be viewed as a long funnel where children enter at the primary level and exit after completing tertiary-level education. However, the education funnel in Mali, like many sub-Saharan African countries, is leaky with various cracks along the way. Many children enter the system at the 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. In 2023, the gross enrolment rate for primary school students in Mali was 83.9%, a remarkable increase from 27.3% in 1990 but still far lower than the average of 108.3% of low-income countries in Africa. Comparing this to the net enrolment rate of 63.9% in the same period leads to two important conclusions. First, a significant number of children in Mali who are of school-going age are not in school (reflected in the low net number). Secondly, many classrooms in Mali are likely to be crowded by older students (reflected in the high gross number).

In the Current Path, Mali's gross enrolment rates will reach 88.9% and 95.5% in 2030 and 2043, respectively. In the same period, the net enrolment rate will be 68.5% in 2030 and 75.7% by 2043. At this rate of progress, the country will still lag behind the average of its income-group peers in Africa. The gross primary completion rate stood at almost 58.8% in 2023, indicating that a sizable number of children who enrolled did not complete the last grade of primary school in Mali. Although this rate is low, it is close to the average of the country's African income-group peers at 61%. On the Current Path, Mali's progress in ensuring more children complete primary school will be slower as it will reach 71.4% in 2030 slightly below the average of 73.8% for its income peers in Africa. By 2043, the primary completion rate in Mali will rise to 81.2%—this is almost on par with the average of African low-income countries at 83.6%.

Of those who complete primary-level education, it is expected that 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, to, thereafter, potentially progress through to the upper secondary and tertiary levels. In Mali, 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 lower than Mali's income-group peers in Africa: gross enrolment for lower- and upper-secondary levels in the country stood at 50.3% and 25.9%, respectively, in 2023, compared to 65.3% and 29.7%. In the Current Path, Mali's progress in gross enrolment for lower and upper secondary will rise to 61.9% and 32.8%, respectively, in 2030. By 2043, gross enrolment for the lower-secondary level will rise to 71.6%, while that of the upper-secondary level will rise to 42.6%. This indicates a significant drop in student retention from lower to upper secondary education.

Completion rates drop acutely from 34.6% in the lower-secondary level to a mere 16.9% in the upper-secondary level, indicative of a rapid contraction in the educational funnel. In the Current Path, lower- and upper-primary completion rates will modestly rise to 39.3% and 20.7%, respectively, almost at par with the average for low-income countries in Africa. Even by 2043, only 48.4% of students are expected to complete their lower-secondary education compared to 32.8% in upper-secondary level. Challenges are even more pronounced at the tertiary level. In 2023, only 6.8% of people within the age group were enrolled in tertiary institutions in Mali, and this will only improve to about 10% in 2030 and 18.1% by 2043 on the Current Path. Worryingly, only 4.8% of the relevant age group in Mali graduated from a tertiary institution with at least a first degree in 2023. This will steadily rise to 5.8% in 2030 and 9.1% by 2043, although it will still be lower than the average rates in other low-income African countries. In summary, the bottleneck at the lower-secondary level contracts even further at upper-secondary and tertiary levels.

Enrolments in vocational training and science and engineering education, which are crucial to the future of work, are quite encouraging. Mali's high youth unemployment rates and the growing demands of the labour market have led to increased efforts to promote technical and vocational education and training (TVET), with a focus on aligning skills with market needs. The emphasis on vocational education is largely due to Mali's rapidly growing youth population. This demographic requires job creation and vocational training to equip young people with the skills necessary for employment. Also, a significant portion of Mali's workforce is employed in low-skilled jobs, mainly within agriculture and the informal economy. As the demand for skilled labour grows across various industries, there is an increasing need for vocational education to enhance employability and entrepreneurship opportunities for young people. The National Employment and Training Observatory (ONEF) plays a key role in forecasting labour market skill needs, ensuring that vocational training aligns with economic demands and promoting a responsive TVET system that links business skill requirements with educational programmes.

Mali's TVET aims to address the qualifications and skills gap by offering specialised training that aligns with current market demands, thus enhancing job prospects for young graduates. Efforts to improve vocational education include the ReCaFoP Project, funded by NUFFIC and led by the KIT Royal Tropical Institute. This aims to enhance vocational training capacity in Mali by strengthening organisational capacity, improving teacher training, developing curricula and upgrading infrastructure. The World Bank has also made significant investments in Mali's TVET sector through projects designed to

improve education and training programmes. These initiatives focus on building institutional capacity, providing basic skills training and creating job opportunities within small and medium-sized enterprises (SMEs). Recent legislative efforts in Mali aim to strengthen the TVET framework, enhance institutional coordination and improve education quality, though challenges remain in fully implementing these reforms. Additionally, initiatives are being implemented to ensure equal access to technical and vocational education for girls, empowering them and addressing gender disparities in education.

In 2023, about 37.2% of upper-secondary school students were enrolled in vocational training programmes in Mali and set to remain so even by 2043. This is far above the average rate of 24.7% for low-income countries in Africa and the third highest in the group, only below the rates in Ethiopia and Rwanda. At the tertiary level, in 2023, 17% of tertiary graduates in Mali enrolled in science and engineering programs, which is high by comparative standards. In the Current Path, Mali's progress rate will stagnate so that, even by 2043, it will still record 17% of tertiary students enrolling in science and engineering.

There is still a large gender gap in education. Despite efforts by women at the local level to increase female enrolment, schools are not challenging stereotypes about girls. In 2023, 91 females were enrolled in primary school for every 100 males in Mali compared to the 94 females to 100 males average of low-income countries. At the secondary level, there were only 91 females enrolled in lower-secondary schools for every 100 males in Mali, as opposed to the average of 87 females for every 100 males in low-income Africa. The ratio worsens notably at higher levels of education. At tertiary level, there were 53 female students for every 100 male students, compared to the average of 84 female students for every 100 male students for Mali's income-group peers on the continent.

The education system in Mali is confronted with enormous challenges regarding the quality of education. For instance, thousands of school-age children in pastoral communities in northern Mali lack access to education. Also, threats from armed groups against schools and the destruction of school infrastructure and equipment have led to a shortage of teachers in affected areas and a breakdown in the pedagogical support system due to massive population displacements. While the 12 years of insecurity have forced the education sector partners to be resilient by developing teaching solutions adapted to population displacement, the overall state of the education system remains concerning. As a result, displaced families and in security-affected areas are experiencing significant problems, which decreases the overall level of enrolment. The government directive aimed at schools in the south to indiscriminately accept relocated students has resulted in overcrowding and diminished educational quality.
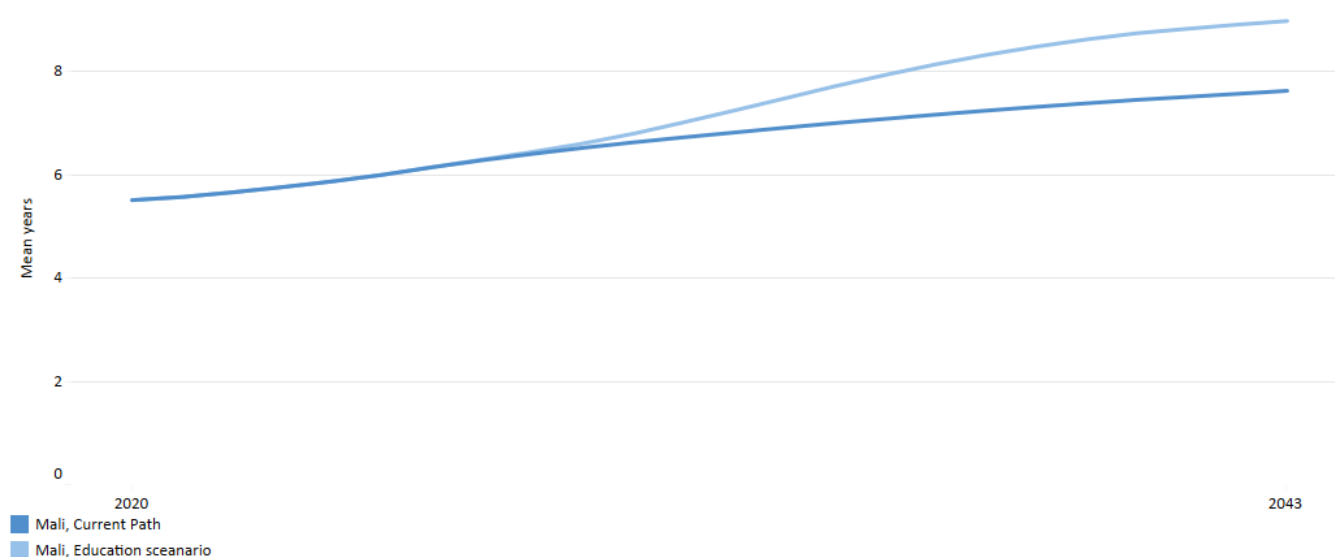
In some schools, a single classroom can often accommodate up to 300 children due to the lack of teachers and infrastructure. In such circumstances, students cannot learn and become disinterested in learning. In addition, Mali's lack of skilled teachers, inadequate textbooks and poor learning conditions all negatively impact learning outcomes for the children who attend school. As a result, most fifth graders struggle to acquire fundamental reading and mathematics skills, for example. Emergency education in crisis zones is also highly underfunded and unsafe. Mali has had 1 in 10 of its schools remain closed since 2022 because of a shortage of facilities and instructional supplies attributed to insecurity and a funding crisis.

Using the average test score as a proxy for quality of education, Mali's performance has lagged behind its income peers in Africa. In 2023, the average test score for primary in Mali stood at 25.8 out of 100 slightly below the average of 28.5 for its income-group peers in Africa. At the secondary level, average test score stood at 33.9 out of 100 which was also lower than the 37.5 recorded for low-income African countries.

In the Current Path, this trend will continue as Mali's performance will continue to trail that of its income group in Africa. Thus, although Mali has tried to improve its education system, significant challenges still need to be addressed. These challenges include limited access to education, particularly for girls and those in rural areas, and low-quality and inadequate resources. The ongoing security situation further exacerbates these challenges, which, if not addressed, can reduce the human capital stock and affect the productivity of labour in the country.

15 to 24 year age group

Mean years

Mali, Current Path
Mali, Education sceanario

Source: IFs 8.34 initialising from Barro-Lee data

Chart 16 presents the mean years of education in the Current Path and in the Education scenario, from 2020 to 2043, for the 15 to 24 age group.

The average years of education in the adult population aged 15 to 24 is a good first indicator of how the stock of knowledge in society is changing. In 2023, the mean years of education attained by adults between 15 and 24 years in Mali stood at 5.8 years—slightly below the average of 5.9 years for low-income countries on the continent. On average, females received one year more schooling than males. In the Current Path, the average Malian between the ages of 15 and 24 years will have received 6.6 years of education in 2030 and 7.6 years by 2043. In the Education scenario, the mean years of adult education will rise to 6.8 years in 2030 and 9.0 years by 2043. At this rate, it will be 1.9 years more than in the Current Path by 2043. The Education scenario further increases average test scores for primary students to 29.3 in 2030 and 34.4 in 2043, compared to the Current Path of 27.1 and 29.9, respectively, in the same period. At the secondary level, the average test scores for students in Mali will rise to 38.1% in 2030 and 42.5% in 2043 more than the Current Path and the average of low-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 Mali above that of its income-group peers in Africa.

Manufacturing scenario

Chart 17: Value-add by sector as % of GDP in the Current Path, 2020-2043

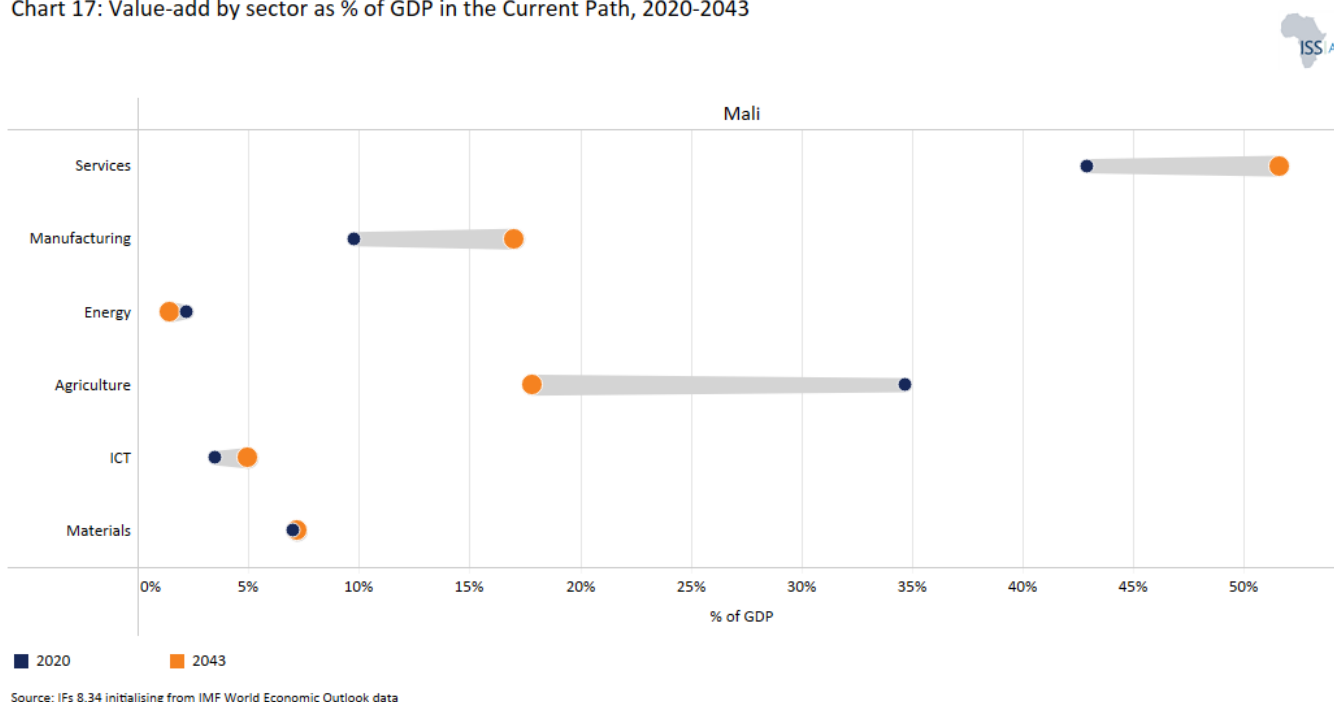Source: IFs 8.34 initialising from IMF World Economic Outlook data

Chart 17 presents the value-add by sector as share of GDP in the Current Path, for 2023 and 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 is crucial for the productive transformation of a country's economy towards sustained high growth, employment creation and improved prosperity. It has backwards and forwards linkages with other sectors, such as the agriculture and the service sectors.

The manufacturing sector in Mali accounts for a relatively small share of its GDP. However, it plays a significant role in employment generation. According to the International Labour Organization's estimates, the industrial sector in Mali accounted for about 10% of total employment in 2021. The manufacturing subsector in Mali includes textiles, agricultural tools, cosmetics, batteries, paint, plastics, processed foods, cement, cigarettes and beverages.

The sector faces several difficulties that limit its development and productivity, including inadequate transportation networks, unstable power supplies and limited access to financing. The sector also lacks access to modern technology and innovative practices, which hurt its ability to compete in the global market. Finally, because of a lack of financial resources, outdated equipment and unskilled labour, productivity levels in the manufacturing sector have remained relatively low.

Initiatives are underway to encourage the expansion and development of Mali's manufacturing industry. The Malian

government has put in place several programmes and policies to entice investment in the industrial sector. These include tax breaks, financial aid and the construction of industrial parks to support manufacturing operations. Furthermore, commercial and industrial cooperation within the area has been made possible because of Mali's membership in regional economic organisations like the ECOWAS. Additionally, through training initiatives, access to financing and technology transfer projects, the government and foreign organisations are supporting small and medium-sized enterprises in the manufacturing sector.

The three largest contributors to GDP in Mali are the services, agriculture and manufacturing sectors. In 2023, the services sector in Mali contributed US$8.2 billion to the economy, equivalent to 43.9% of GDP. This is followed by the contribution of the agriculture sector valued at US$6.5 billion, equivalent to about 35% of GDP. The manufacturing sector, contributed US$1.8 billion, representing 9.8% of GDP in 2023. In the same period, the materials sector (which includes mining) US$1.3 billion equivalent to 6.9% of GDP while the contributions of the information and communications (ICT) and energy sectors were valued at US$652.5 million, (3.5% of GDP) and US$457.1 million (2.5% of GDP), respectively.

On the Current Path, the services sector will extend its dominance in the economy with its contribution to GDP expected to reach 47.5% in 2030. By 2043, the service sector will almost quadruple in size to US$27.3 billion by 2043 (51.6% of GDP). Although the contribution of the agricultural sector to GDP will decline, it will continue to remain the second largest contributor over the forecast period and it will grow in size. Its contribution will be valued at US$7.5 billion (equivalent to 29% of GDP) in 2030 and US$9.4 (equivalent to 17.8% of GDP). The contribution of manufacturing to GDP in Mali will increase to constitute 11.9% (valued at US$2.9 billion) of GDP in 2030 and 17% (valued at US$9.0 billion) of GDP by 2043 almost at par with agriculture. The material sector in Mali will still be the fourth-largest contributor to GDP with a share of 6.3 in 2030 and 7.2% of GDP in 2043. The energy sector will contribute 2.1% to GDP in 2030 and decline to 1.4% by 2043. At this rate, it will be lower than the contribution of ICT which will reach 3.8% in 2030 and 4.9% by 2043.

The relative decline of the agricultural sector and the rapid expansion of the manufacturing sector reflect the anticipated structural transformation of the Malian economy. While this shift has the potential to drive rapid economic growth and create jobs, it also risks increasing inequality, particularly as a significant portion of Mali's population, especially the poor and vulnerable groups, depend on agriculture for their livelihoods. Therefore, the transition to a larger manufacturing sector must be accompanied by social protection measures, such as welfare transfers to displaced workers, to ensure that the country achieves inclusive growth and shared prosperity while safeguarding the well-being of the poor and vulnerable.

Chart 18: Value-add by the manufacturing sector in the Current Path and Manufacturing scenario, 2020-2043

Mali, Current Path
Mali, Manufacturing scenario

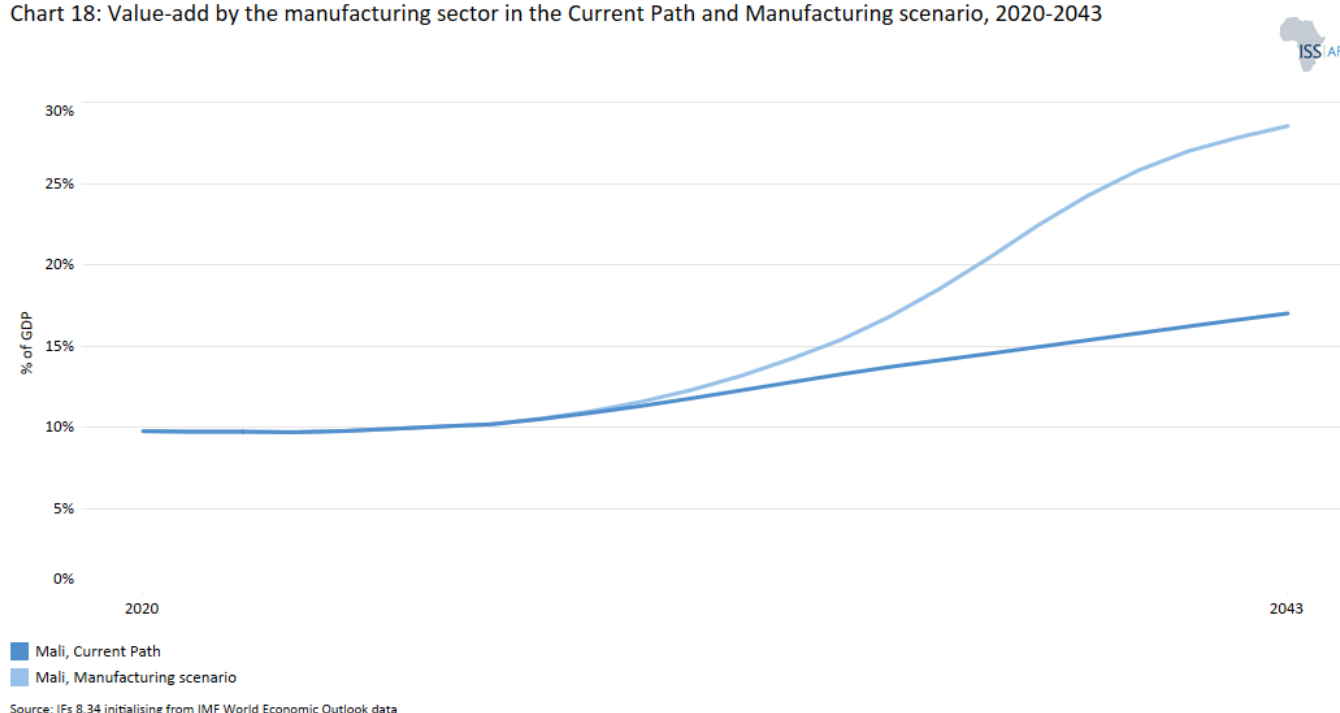Source: IFs 8.34 initialising from IMF World Economic Outlook data

Chart 18 presents the contribution of the manufacturing sector to GDP in the Current Path and in the Manufacturing scenario, from 2020 to 2023. The data is in US$ and % of GDP.

In the Manufacturing scenario, Mali makes substantial progress in industrialisation compared to the Current Path. By 2043 the share of the manufacturing sector in GDP is about 29% (US$16.5 billion)—about eleven percentage points of GDP above the Current Path. It means that an aggressive manufacturing transition can add extra US$7.5 billion to the economy of Mali.

Industrialisation is a complex and long-term process that requires strong, collaborative relationships between the state, which provides support and guidance and the private sector. For firms to thrive, they need a government with a clear economic vision and strategy, efficiently providing supportive infrastructure and services, and a regulatory environment that fosters entrepreneurship. Additionally, firms require a government that facilitates the acquisition of new technology and access to emerging markets and economic activities. Given this, it is crucial for Mali to pursue an ambitious manufacturing transition by increasing investment in the sector, promoting research and development (R&D), and creating an enabling environment for the private sector through government regulation that empowers and enables the sector. In this process, the government should also focus on increasing female labour participation, which currently lags nearly 18 percentage points behind male participation, by supporting education, training and affirmative policies. To mitigate the potential rise in inequality that often accompanies a transition to low-end manufacturing, the government should also expand welfare transfers to unskilled workers.

AfCFTA scenario

Chart 19: Export and imports as % of GDP in the Current Path, 2000-2043

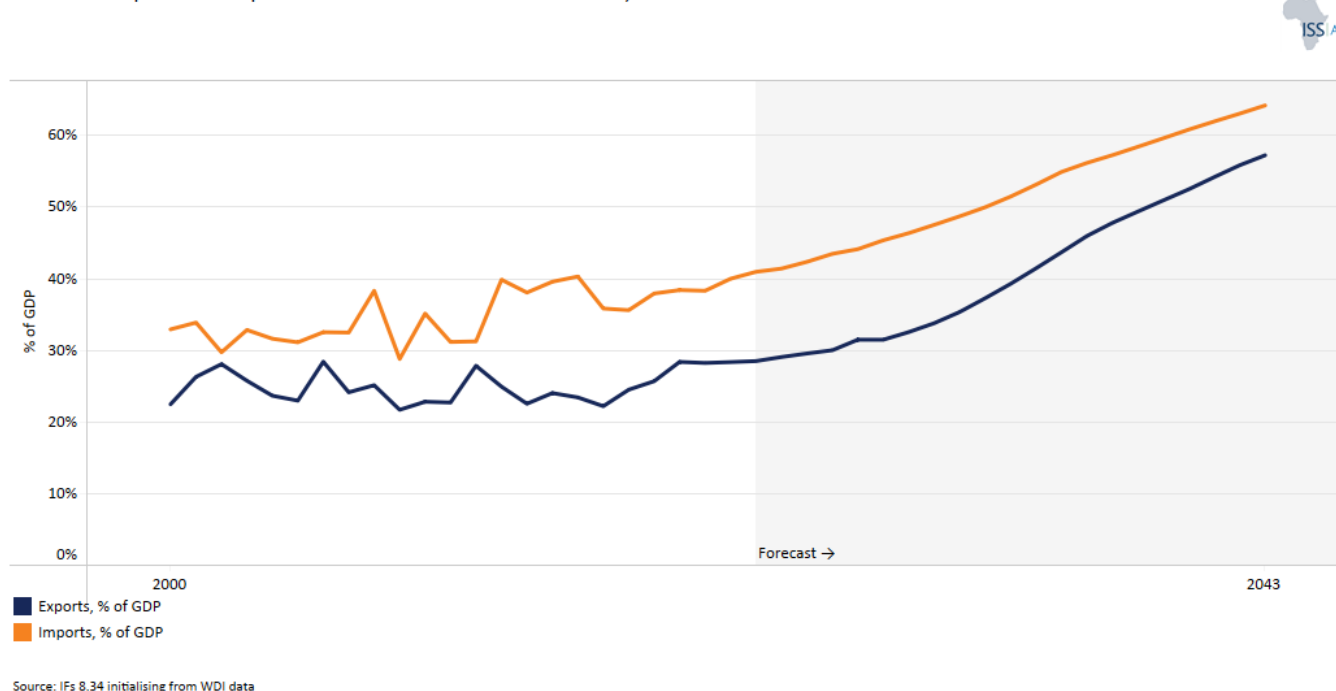Source: IFs 8.34 initialising from WDI data

Chart 19 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.

Historically, Mali's economy is more open[2] to trade compared to its income-group peers in Africa. In 1990, the sum of Mali's exports and imports stood at 46.6% of GDP, which was above the average of 26.6% for low-income countries in Africa. By 2023, trade openness in Mali had jumped to 70.4% of GDP—far above the 43.8% average for low-income countries. On the Current Path, this trend will continue as the sum of Mali's exports and imports will reach 81.3% of GDP in 2030 and 121.5% of GDP by 2043 far exceeding the average rates for its income-peers in Africa.

Over the years, efforts have been made to improve the country's trade. Mali is a member of the WAEMU, whose purpose is to reduce trade barriers by creating a common market. It has a customs union with a common external tariff. As a result, it benefits from the Trade and Investment Framework Agreement (TIFA), which offers the framework and principles for trade and investment negotiations between the WAEMU and the US. Mali is a member of the World Trade Organization and also signed the AfCFTA agreement in March 2018 to promote intra-African trade. Mali has also eliminated export duties and taxes on many products and established free zones to boost exports. In addition, the country has relatively low customs duties averaging around 10%, with few legal and regulatory trade barriers.

However, there are still factors that constrain trade. Inadequate infrastructure, such as roads, remains a constraint to economic integration in the country as well as the high costs of energy and telecommunications, which act as a

disincentive to trade in the country. Despite enjoying the preferential treatment granted to developing countries, the country exports only a small number of products, which are usually raw materials that are generally subject to zero or very low most-favoured-nation import duties in the importing countries. Also, Mali's manufacturing sector remains undeveloped. Although the country has substantial potential in the textile and agri-food industries, the damaging escalation of import duties does not favour the development of this sector. In recent years, economic sanctions, such as the trade and financial embargo and border closure imposed on the country in early 2022 by ECOWAS and WAEMU, have negatively affected trade in Mali. Although these sanctions have been lifted, the decision by Mali to leave ECOWAS will impact negatively on its intra-regional trade, especially with non-UEMOA countries.

In 1990, the total export volume in Mali stood at US$691.3 million, constituting 15.7% of GDP, far above the average of 9.3% for its income-group peers. Since then, exports from Mali have grown rapidly. By 2023, Mali's exports stood at US$5.3 billion, equivalent to 28.9% of GDP, far exceeding the average of 16.3% for low-income African countries. Gold is a major export of Mali accounting for 96% of total exports in 2022. Mali is also one of the largest exporters of cotton in Africa although only accounting only about 2% of total export in the same year. Other significant exports include oily seeds, rough wood and refined petroleum. Mali also trades in transportation, financial, insurance and cultural and recreational services. Although the country aims to become self-sufficient in cereal production and a leading cereal exporter in the West African region, it is yet to achieve this vision, despite significant progress. Almost two-thirds of total exports from Mali are destined for the United Arab Emirates, 16.7% for Switzerland. This reveals a significant shift in export destinations from previous years which had South Africa, Bangladesh and Côte d'Ivoire as its main export destinations. Other notable export destinations include Australia, China and Turkey. On the Current Path, total exports in Mali will reach 33.8% of GDP, equivalent to US$8.7 billion, in 2030 and 57.3% of GDP valued at US$30.3 billion. It will be almost twice the average for low-income group peers in Africa.

In terms of imports, Mali's total imports grew from US$1.3 billion, equivalent to 30.9% of GDP in 1990 to US$7.7 billion, representing 41.5% of GDP, in 2023. At that rate, Mali's total imports as a proportion of GDP were higher than the estimated average of 27.5% for low-income African countries in the same year. The country imports large volumes of refined petroleum (representing 32% of total imports). Other top imports of Mali are broadcasting equipment, packaged medicaments, light pure woven cotton and broadcasting equipment. Imports from Côte d'Ivoire and Senegal account for 24% and 18.6% of total imports into the country respectively. This is followed by imports from China, France and Burkina Faso. In the Current Path, total imports to Mali will reach US$12.3 billion (47.5% of GDP) in 2030 and US$34 billion (64.2% of GDP) by 2043. The high import volumes coupled with the lower exports result in a trade deficit.

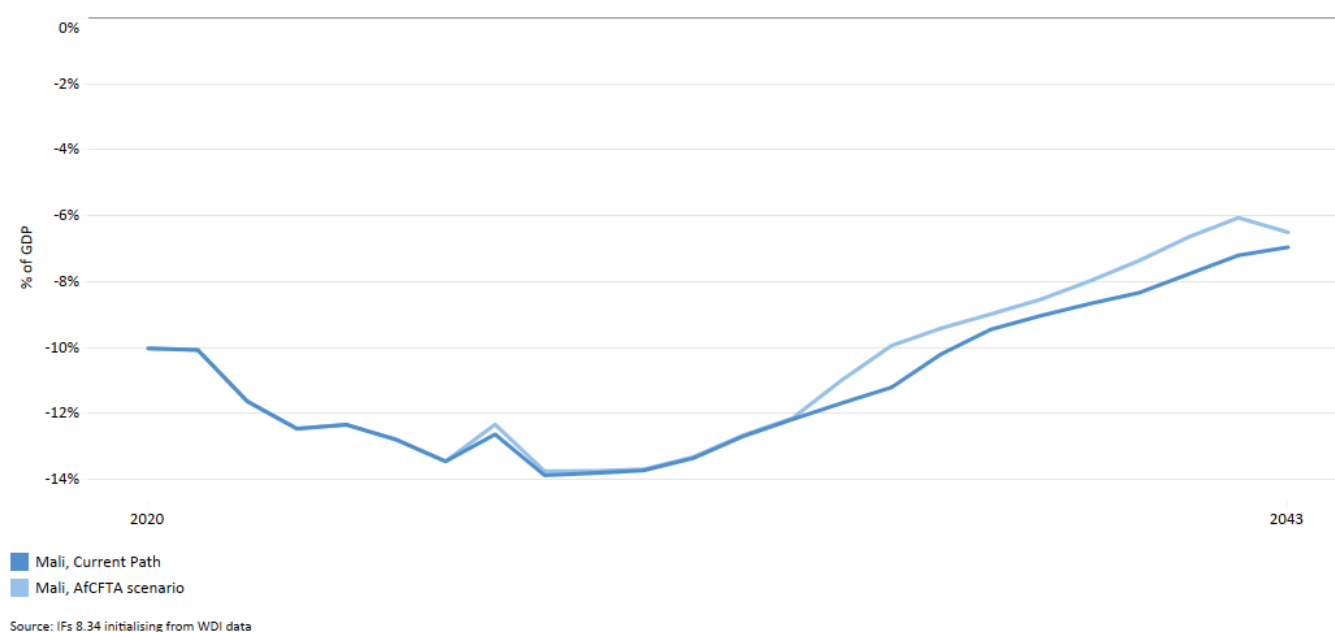Source: IFs 8.34 initialising from WDI data

Chart 20 presents the trade balance in the Current Path and in the AfCFTA scenario, from 2020 to 2043 as a percentage of GDP.

Mali has a chronic deficit in its trade balance since exports only cover about half of imports. 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. Mali's trade deficit in 2023 constituted 12.3% of GDP, which was above the average of 10.3% for low-income African countries. In the AfCFTA scenario, the sum of Mali's exports and imports as a percentage of GDP will reach 85.3% in 2030 and 123.3% by 2043 slightly above its Current Path.

Throughout the forecast period, the AfCFTA scenario leads to a faster improvement in Mali's trade balance than the Current Path. By 2043, Mali's trade deficit in the Current Path will constitute about 6.9% of GDP, whereas, in the same year, the AfCFTA scenario will mitigate this situation leading to a slightly lower deficit of 6.5% of GDP. This is almost at the same level as the average for its income-group peers in Africa. Although the impact on reducing trade deficit is limited, Mali will benefit from the AfCFTA. The full implementation of the AfCFTA will improve competitiveness, particularly in growing the country's manufacturing sector. It fosters greater trade openness, promoting the diffusion of technology within countries and enhancing productivity and innovation. As a result, resources are directed to their most efficient uses, leading to welfare gains and lower consumer prices. Additionally, it could boost Mali's exports by providing access to a much larger market and strengthen the manufacturing sector through increased competition. Consequently, the AfCFTA has the potential to drive faster economic growth, create more jobs in key sectors and reduce poverty.

Large Infrastructure and Leapfrogging scenario

Chart 21: Electricity access: urban, rural and total in the Current Path, 2000-2043

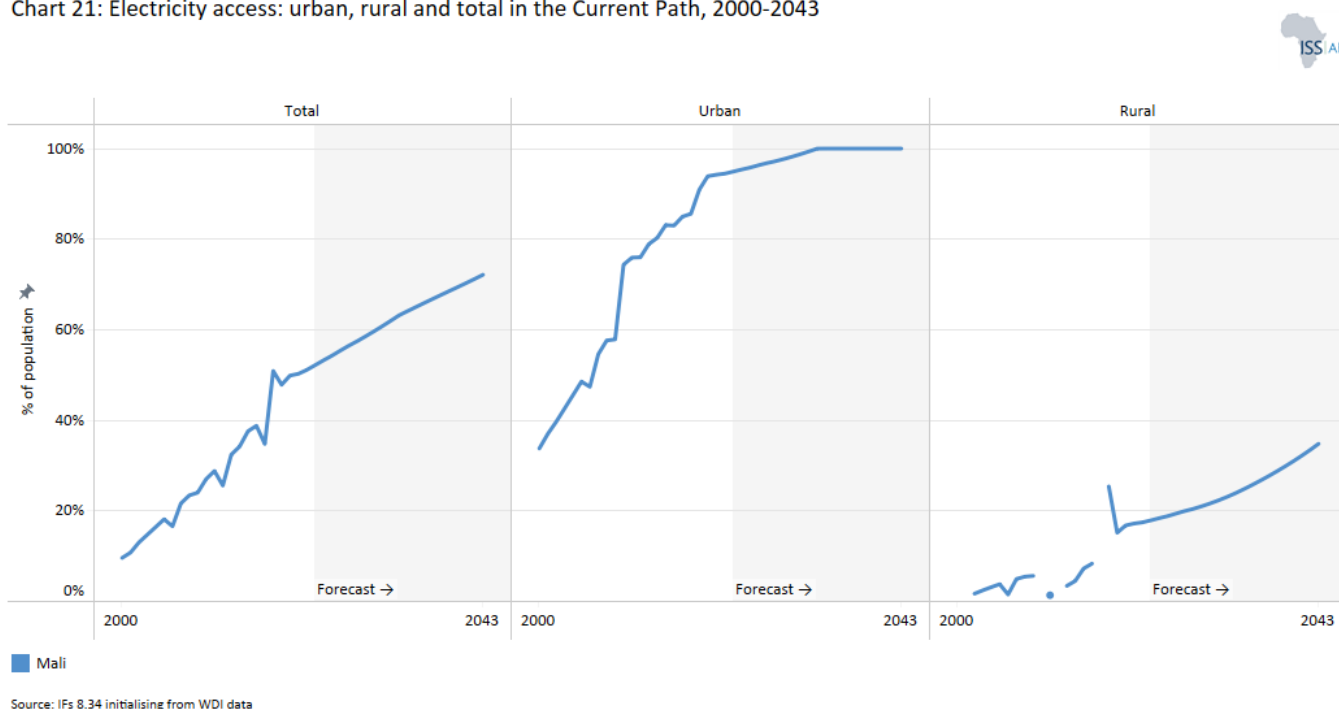Source: IFs 8.34 initialising from WDI data

Chart 21 presents the Current Path of access to electricity for urban, rural and the 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 incorporates 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. In this study, we focus on both physical and digital infrastructure, including roads, electricity access and ICT. Although Mali has made significant strides in improving the quality and quantity of basic infrastructure, the country's infrastructure stock is limited and aged. The Africa Infrastructure Development Index (AIDI) consists of four composite indicators — transport, electricity, ICT, and water supply and sanitation needs. According to 2024 AIDI, Mali (with a score of 19.2) ranked 36th in infrastructure development. This reflects the infrastructure deficit in the country.

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. Over the years, Malian authorities have continued to make efforts to improve the road network in the country. The creation of a second-generation road fund in 2000 and the inception of a Road Maintenance Executing Agency contributed to improving road infrastructure in the country. In 2023, the total length of roads in Mali was estimated to be 108 694 km of which only 9 130 km, equivalent to 8.4% was paved. The low per cent is below the average of 12.7% for low-income countries in Africa. On the Current Path, the total road network in Mali will increase to 121 962 km in 2030, of which only 12.2% will be paved. By 2043, the total road network will

rise to 136 254 km by which paved roads as a percentage of total roads will constitute 22.7% still below the average of 34.8% in Africa's low-income countries.

Electricity production in Mali is mainly generated from hydraulic power comprising 55% of electricity production, and diesel accounts for 45%. In 2023, 52.2% of the people in Mali had access to electricity. This was above the average of 37.8% of low-income countries in Africa. Similar to the trend observed in most low-income countries in Africa, an overwhelming 94.9% of urban residents, but only 17.9% of rural dwellers, had access to electricity in 2023, reflecting the disparity in favour of urban areas. This low access to electricity particularly hinders economic growth and reduces quality of life.

To improve access to electricity, the Malian government is working to expand its renewable energy resources, particularly solar and hydroelectric power, through initiatives aimed at developing solar mini-grids and hybrid systems for remote communities. As a result, solar capacity in the country has increased significantly, growing from 16 MW in 2013 to 100 MW in 2022, thereby improving energy access for thousands of people. Additionally, decentralised solar mini-grids have been implemented to address rural electrification challenges, fostering local socio-economic development and supporting the achievement of SDG goal 7.1 by providing electricity to remote areas. To further encourage investment in the energy sector, the Malian government has established a legal framework to promote Public-Private Partnerships (PPPs), focusing on attracting private investment for rural electricity generation and distribution. The Malian Agency for Rural Electrification (AMADER) plays a key role in facilitating these partnerships. Furthermore, Mali collaborates with international organisations such as the World Bank and the African Development Bank to secure financing for large-scale energy projects, addressing structural challenges within the sector.

Despite these efforts, significant challenges persist. The country's electricity grid is outdated and overloaded, struggling to meet increasing power demand. The state utility, Energie du Mali (EDM), operates inefficiently and relies heavily on subsidies, resulting in financial losses that limit investment in necessary infrastructure upgrades. The cost of energy generation exceeds the price at which it is sold. For example, the average production cost is approximately US$0.24 per kWh, while consumers pay about US$0.16 per kWh, placing a strain on the national budget. Furthermore, frequent brownouts and load shedding occur due to a mismatch between the rising demand (about 10% per year) and the insufficient supply. Many businesses are forced to rely on expensive diesel generators, further exacerbating financial pressures.

On the Current Path, access to electricity will reach 59.9% and 72.1% of the population by 2030 and 2043, respectively, which will be above the average for Mali's income-group peers (estimated at 44.3% in 2030 and 58.8% in 2043). The disparity in electricity access in favour of urban residents will continue such that, by 2033, all urban residents in Mali will have access to electricity, a trend that will continue till the end of the forecast. However, only 21.6% of Malians living in rural areas will have access to electricity and even by 2043, this will marginally increase to 34.8% of rural dwellers. This suggests that the government needs to intensify its rural electrification projects to bridge the gap in electricity access among rural-urban dwellers. With an estimated 800 MW of hydroelectric power, potentially unlimited solar energy and over 300 MW of biomass, the country can fully tap into this renewable energy potential to increase production and access.

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. It can also enable firms to adopt more efficient technologies, improving productivity and driving economic growth. The Malian government has developed a comprehensive strategy (the Mali Numérique 2020 strategy, officially titled Stratégie Nationale de Développement de l'Économie Numérique) to strengthen its digital economy, focusing on six key pillars: expanding digital infrastructure, promoting local digital industries, enhancing e-governance and public services, developing digital content, improving human capital through education and training, and ensuring digital security. The strategy aims to position Mali as a regional leader in digital growth.

In accordance with the Mali Numérique 2020 strategy, significant investments are being made to increase broadband access across the country, with the goal of achieving 50% mobile internet penetration and providing high-speed connectivity to underserved communities. These efforts are vital for stimulating economic activity and improving access to information. Organisations like iCodeVillage are empowering youth through coding and digital skills training, stimulating entrepreneurship, particularly among young women, by equipping them with the skills needed to navigate the digital economy. Moreover, the Bamako Digital Complex Support Project, funded by the African Development Bank, aims to expand Mali's use of ICT to boost productivity and competitiveness across various sectors. This project emphasises the importance of integrating ICT into economic activities.

Owing to these investments, mobile broadband subscriptions in Mali are high. For instance, the number of people with access to a mobile line grew by 300% between 2004 and 2007, allowing Mali to catch up with its income-group peers and positioning the country among the best performers in West Africa. In 2023, Mali had a mobile broadband subscription rate of 65.8 per 100 people, almost double the average of 36.2 for low-income countries on the continent. On the Current Path, mobile broadband subscriptions will rise to 129 per 100 people in 2030 and 153 per 100 people in 2043—20% above the average of its income-group peers. However, Mali's progress in fixed broadband access, like many other African countries, has lagged. In 2023, the total number of fixed broadband subscriptions in the country was estimated at about 1.8 per 100 people—slightly below the average of 1.9 per 100 people in low-income Africa. In the Current Path, fixed broadband subscriptions will rise to 6.1 per 100 people in 2030 and 21.9 per 100 people by 2043, above the average of 18.4 subscriptions per 100 people for low-income African economies.

The Mali Numérique project initiative includes partnerships with major tech corporations, such as Huawei, to enhance digital infrastructure. Key components of the project include the installation of 1 000 kilometres of fibre optic cables and the creation of a Tier 3 data centre to centralize government data. Despite this, only a quarter of the Malian population had access to the Internet in 2023. Although this was higher than the average usage of 17.9% in low-income countries, it is half of what exists in Gambia, which is the highest among the low-income countries. Also, on the Current Path, Mali's progress will lag behind its income-group peers so that it will reach 21.7% in 2030 and, in 2043, the proportion of people with access to the Internet in Mali will almost be on par with the average for its income-group peers in Africa at 22%. Currently, Mali's low internet service penetration worsens inequality, limits access to essential services and restricts the country's potential for economic growth and development in an increasingly digital world.

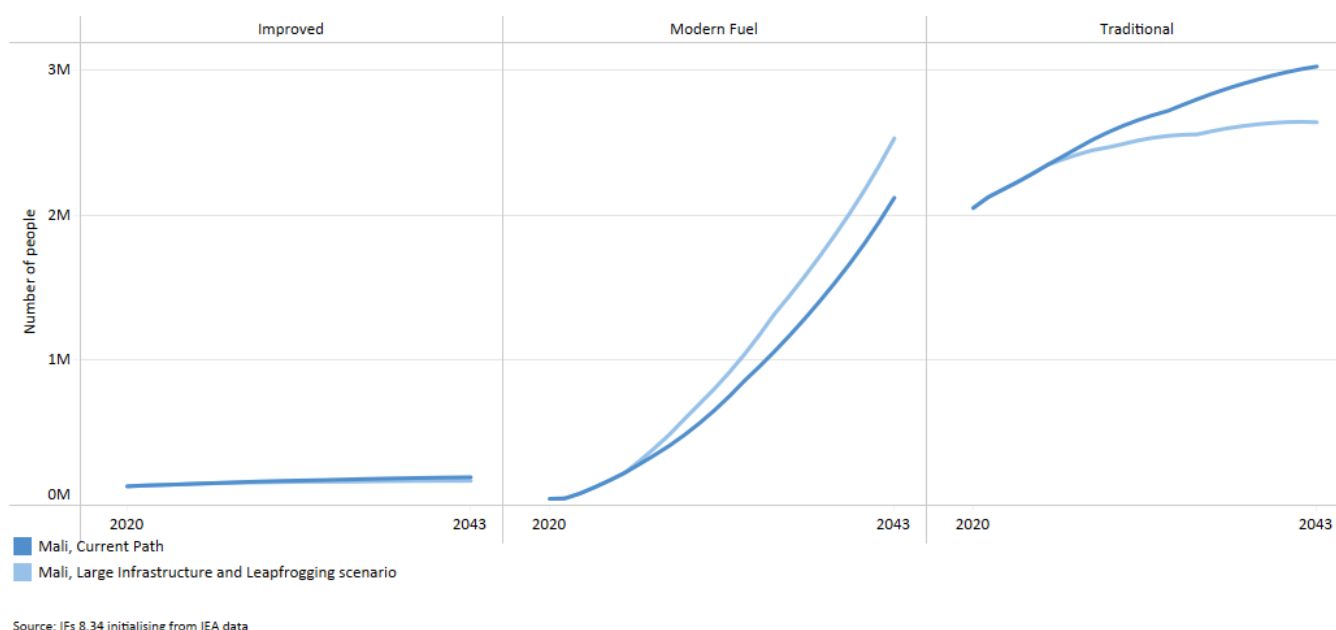Source: IFs 8.34 initialising from IEA data

Chart 22 presents the number of people using cookstoves in the Current Path and in the Large Infrastructure and Leapfrogging scenario, from 2020 to 2043.

Our modelling distinguishes between three types of cooking stoves: traditional, improved and modern. In 2023, 89.3.5% of households in Mali used traditional stoves with firewood or charcoal for cooking, while 5.7% used improved cooking stoves and 5.0% used modern stoves for cooking. This means that an overwhelming majority of people in Mali, therefore, still rely on traditional stoves for cooking, which contributes to pollution and carbon emissions and negatively impacts the health of these households. A similar trend is observed in most low-income countries in Africa with 88% using traditional cookstoves.

As access to electricity in urban and rural areas increases, more households will likely switch from traditional cooking stoves to improved and modern fuel stoves, such as electric and gas cookers. Based on the Infrastructure scenario, it is projected that 62.7% and 80% of Malians will have access to electricity by 2030 and 2043, respectively. Also, all Malians living in urban areas will have access to electricity in the scenario as early as 2030 and the portion of people with access to electricity in rural areas will improve to 25.9% in 2030 and 48.9% by 2030 in the scenario instead of 34.8% in the Current Path.

As a result, 47.3% of households in Mali will use modern fuel for cooking in the Large Infrastructure and Leapfrogging scenario in 2043. This will be higher than the average for the country's income-group peers at 34.3%, and the 39.7% in the Current Path by 2043. Clearly, this will reduce health-related diseases and carbon emissions arising from the use of traditional cookstoves in the country.

Mobile broadband

Mali, Current Path
Mali, Large Infrastructure and Leapfrogging scenario
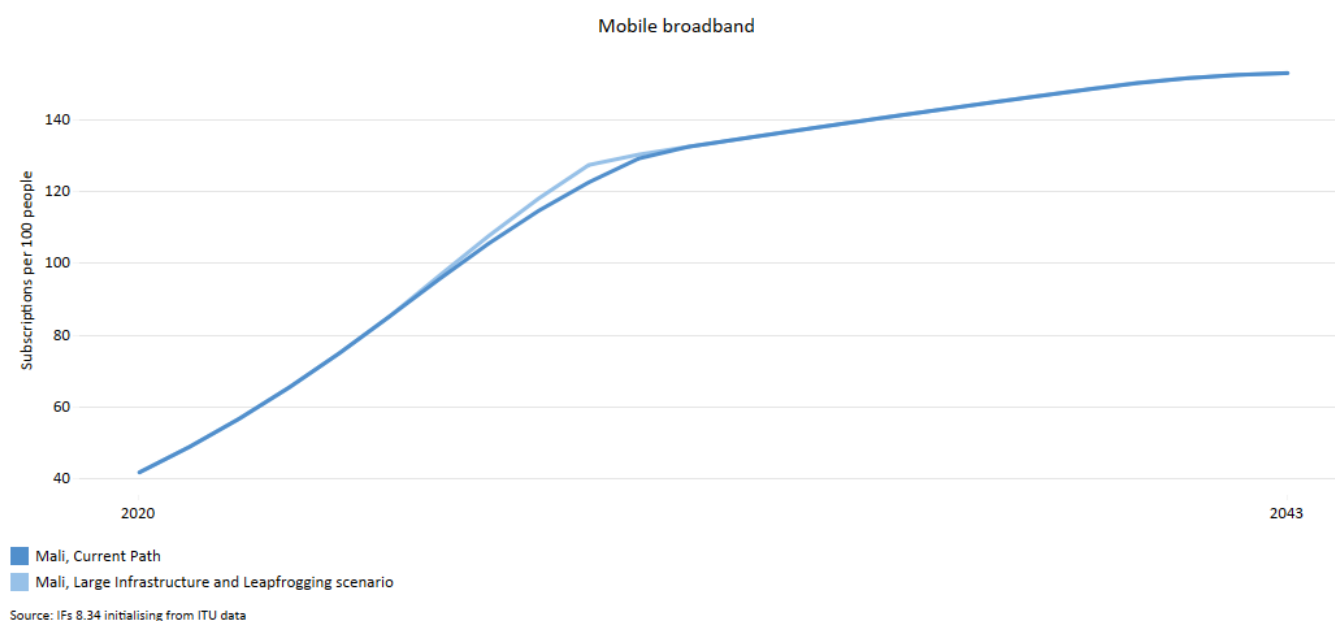Source: IFs 8.34 initialising from ITU data

Chart 23 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 2020 to 2043. The user can toggle between mobile and fixed broadband.

In the Infrastructure scenario, access to fixed broadband will rise to 6.5 per 100 and 24 per 100 people subscriptions by 2030 and 2043, respectively. This will be above the average of 18.4 for low-income African countries in 2043. In the case of access to mobile broadband, due to the aggressive performance of the Current Path forecast, reaching 153 subscriptions by 2043, the Large Infrastructure scenario has only a marginal impact. The scenario will peak at 156 subscriptions per 100 people by 2038 and remain so till 2043—higher than the average of 127.6 for Africa's low-income countries in the same period.

Financial Flows scenario

Chart 24: FDI, foreign aid and remittances as % of GDP in the Current Path, 1990-2043
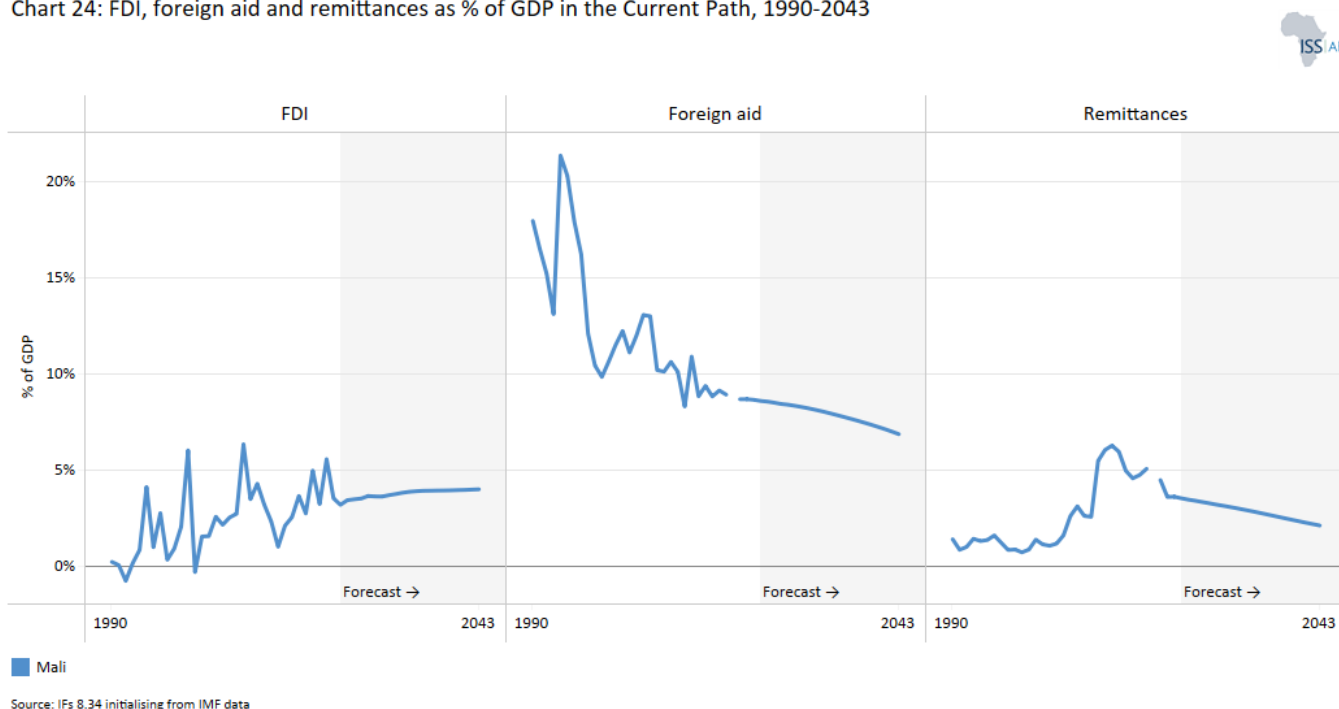

Source: IFs 8.34 initialising from IMF data

Chart 24 presents the trends in FDI, aid and remittances in the Current Path and in the Financial Flows scenario 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.

FDI inflows to Mali, like most low-income countries, are historically low. In 1990, the total FDI inflow to Mali was equivalent to a paltry 0.2% of GDP—on par with the average for low-income countries in Africa. By 2023, FDI inflows to Mali reached 3.2% of GDP slightly below the average of 3.9% of GDP for low-income African countries. The majority of the FDI received by Mali is destined for oil extraction, gold exploitation, the textile industry, telecommunication, infrastructure and financial intermediation and comes from France, China, the US, Canada and India. Mali was ranked 148 out of 190 countries in the World Bank's Ease of Doing Business Report. This reflects the difficult business environment and the numerous obstacles to investing in Mali. The country's fragile political situation, persistent insecurity, especially in the northern part, and underdeveloped business environment are the main reasons for the low FDI in the country. Other factors that may hinder foreign investment in Mali include governance-related challenges, the impact of economic sanctions, and infrastructure gaps. Businesses in Mali have to grapple with corruption in procurement processes, land administration, various tax payments and complex customs procedures.

Prior to the coups, the government put in place various measures to attract more FDI. This is to be achieved by encouraging competitiveness and private sector participation in all sectors of the economy, with particular attention given to sectors such as agribusiness, fishing and fish processing, livestock and forestry, mining and metallurgical industries, and tourism and hospitality industries.

There have also been efforts to undertake financial and economic reforms, such as improving fiscal transparency and reducing corruption to attract FDI. In this vein, the government committed to improving public financial management practices and increasing tax revenue by strengthening revenue collection agencies, ensuring tax compliance and reducing fraud in tax administration. On the Current Path, FDI inflows are expected to marginally decline to 3.7% in 2030 before rising to reach 4.0% of GDP by 2043. However, this will still be below the Current Path average of 4.7% for low-income countries on the continent by 2043.

Historically, Mali received relatively more foreign aid than other low-income African countries. In 1990, the total aid received by Mali constituted 18.0% of GDP, compared to 12.7% received by other low-income African countries in the same period. By 2023, total aid as a percentage of GDP stood at 8.7%, equivalent to US$1.6 billion. This was close to the average of 8% for other low-income countries in Africa. Mali received aid from diverse donor sources. For instance, in 2022, US bilateral foreign assistance to support the country's development amounted to US$148 million. Likewise, the European Union has contributed over €506 million since 2012 to address urgent humanitarian needs and support long-term development initiatives. A large proportion of aid received by Mali is spent on food, basic essential goods or emergency shelter, health and nutrition and education, among others. Foreign aid is also channelled towards promoting agricultural growth, ensuring food security and building resilience against climate change impacts.

On the Current Path, foreign aid will decline to 8.2% of GDP in 2030 and 6.9% of GDP in 2043, although the absolute amount will increase to US$3.6 billion by 2043. However, this will still be higher than the average of 5.1% of GDP for other low-income countries in Africa. The projected decline in aid to Mali reflects both expectations of economic growth and shifts in donor engagement in response to the current political context. Governance arrangements are often a consideration for continued support, particularly among Western partners and multilateral institutions. Given the critical role aid plays in Mali's economy, especially in sectors such as education, healthcare and humanitarian assistance, a sharp decline in aid over the medium term could have devastating effects on the economy and exacerbate poverty.

Remittances serve as a lifeline for many families in Mali, not only supporting immediate consumption but also facilitating long-term investments that contribute to the country's development. Historically, remittances in Mali are high compared to its income-group peers in Africa. According to the UNDP, Mali is the fourth-largest recipient of remittances in West Africa after Nigeria, Ghana and Senegal. In 1990, total remittances inflow to Mali was valued at US$61.5 million, equivalent to 1.4% of GDP, which was almost twice the average rates for its income peers in Africa. By 2023, this has grown rapidly so that Mali received US$665 million in remittances, constituting 3.6% of GDP, well above the average of 2% for low-income African countries. It could mean that there are more Malian migrants in the diaspora (most of the Malian diaspora are in France, Spain and Italy) than its income-group peers, or that Malian migrants have sent relatively higher remittances home than in other low-income countries.

A large portion of remittances is used to meet daily household needs, including food, clothing and healthcare, which enhances living conditions and reduces poverty for recipient families. Additionally, families often allocate remittance income toward educational expenses such as school fees, uniforms and supplies, thus improving access to education for children in both rural and urban areas. Remittances also help cover healthcare costs, enabling families to afford medical treatments and insurance, which is crucial given the limited healthcare facilities in many regions. Some recipients use their remittance funds to invest in agricultural activities, such as purchasing seeds, tools and livestock, thereby boosting food security and economic resilience in rural communities. Funds are frequently directed toward building or renovating homes and improving living conditions and infrastructure within communities. A portion of remittances is also invested in small businesses, supporting local economic development and creating jobs. On the Current Path, remittances to Mali will increase to US$794.5 million (3.1% of GDP) in 2030 and US$1.1 billion (2.1% of GDP), exceeding the average of 0.8% of GDP projected for low-income countries.

Chart 25: Government revenue in the Current Path and Financial Flows scenario, 2020-2043

Mali, Current Path
Mali, Financial Flows scenario
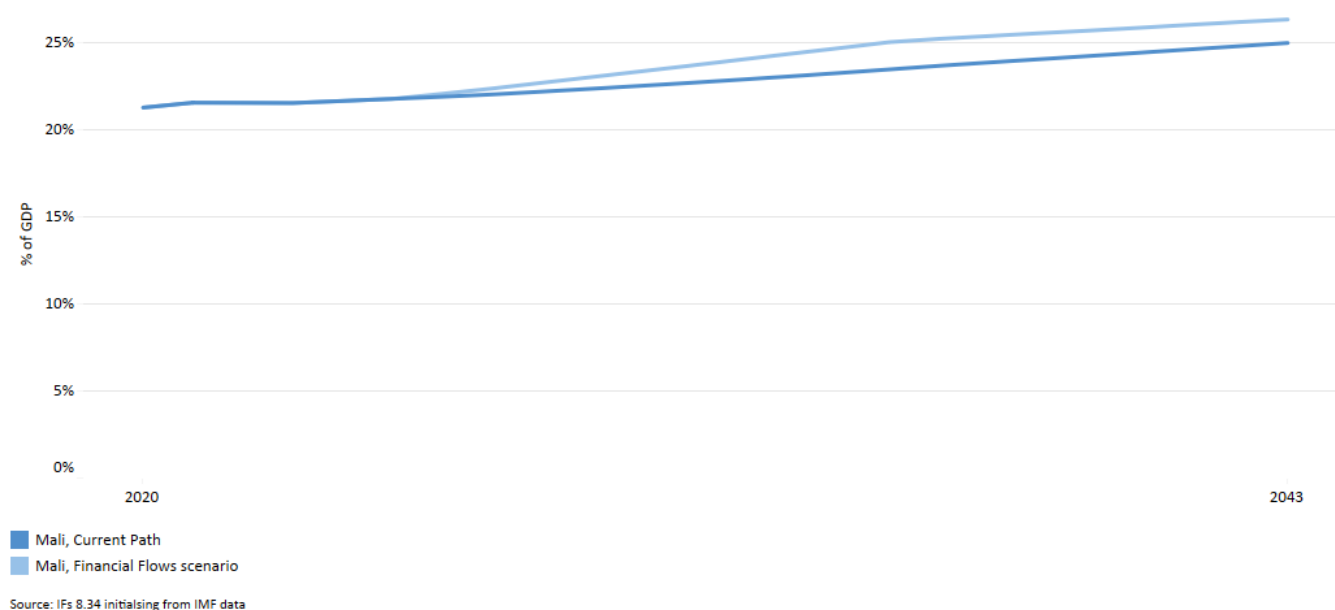
Source: IFs 8.34 initialising from IMF data

Chart 25 presents government revenue in the Current Path and in the Financial Flows scenario, from 2020 to 2043. The data is in US$ 2017 and % of GDP.

Wagner's law postulates that public expenditure increases as national income rises. It is, therefore, reasonable to expect that government revenues will increase as a per cent of GDP in the Financial Flows scenario compared to the Current Path. Chart 25 indicates that higher financial 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 Mali amounted to US$4.1 billion, equivalent to 22% of GDP—higher than the average of its income-group peers in Africa. Similarly, Mali's revenue without aid, estimated at 11.4% of GDP, is above the average of 9.7% for low-income countries in Africa.

In the Financial Flows scenario, government revenue will rise to US$15.0 billion in 2043, representing 26.3% of GDP above the average of 20.0% for low-income countries in Africa in the same year. Compared to the Current Path, the Financial Flows scenario will further improve government revenue in Mali by almost an extra US$242 million in 2030 and US$1.4 billion by 2043. This highlights the need for the government of Mali to implement targeted policies aimed at attracting more financial flows, particularly foreign direct investment (FDI), into the country. The increased government revenue could then be used to support public spending, especially in addressing the needs of the growing population and investing in key sectors that drive economic growth.

Governance scenario

Chart 26: Government Effectiveness score in the Current Path, 2002-2043
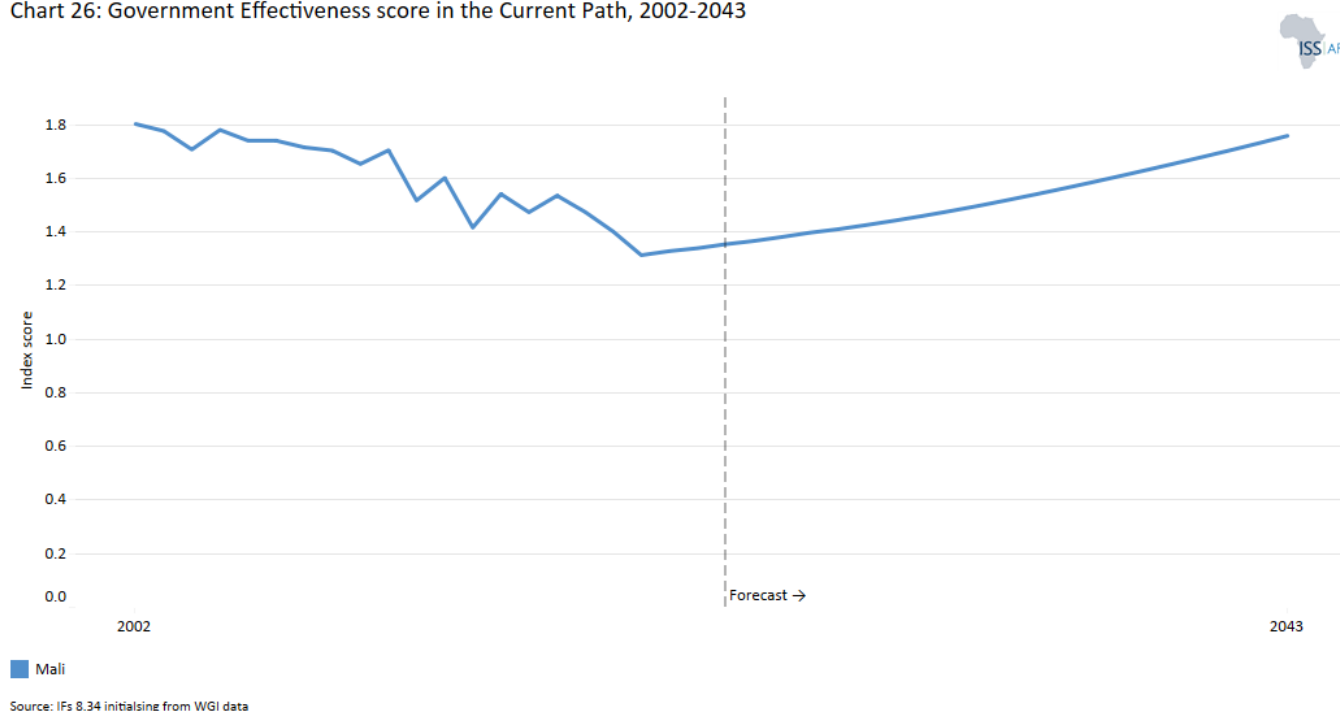

Source: IFs 8.34 initialsing from WGI data

Chart 26 presents the Current Path of government effectiveness comparing the country to the average for the Africa income group, from 2002 to 2043.

This scenario assumes better governance: stability, capacity, and inclusion. It 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. It is also include additional component of social transfers to unskilled labour and increase in tax on skilled labour.

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

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 composite 'governance triangle' 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.

Generally, Mali performs better on governance indices than most African countries. Its score on the composite governance index of 0.46 in 2023 was 5.3% higher than the average for its income peers in Africa. A further disaggregation into the three dimensions of the triangle (i.e. security, capacity and inclusion) shows that the country performed slightly better across all these three indexes compared to its income peers until recently when its score on democracy dipped due to the military takeovers in 2020 and 2022.

Mali's score of 0.67 for 2023 on the governance security index is slightly higher than the average of 0.63 for low-income

countries in Africa. This is despite Mali's history of insecurity, political instability and the threat of terrorism and rebel groups. For instance, since 2012, Mali has experienced political instability, with three coups in March 2012, August 2020 and May 2021 truncating the democratic processes in the country. The country's stability is also continuously threatened by internal armed conflict and attacks on civilians by security forces, rebel and militant groups leading to the displacement of people and loss of lives and livelihoods. In 2022 alone, the clashes between the Islamic State in the Greater Sahara and Jama'at Nasr al-Islam wal Muslimin led to the displacement of over 30 000 Malians to Ménaka, in eastern Mali.

Violence in the country has escalated since 2015, with various attacks linked to al-Qaeda and Islamic State leading to the deaths of thousands of people and displacement of over six million people. Despite the presence of the UN peacekeepers, French troops and others, including the recent deployment of the former Wagner private military company from Russia, the number of terror attacks and Malians joining insurgent groups in the country has steadily risen over the years. In June 2023, the interim government asked the UN peacekeeping mission known as MINUSMA, which has been in the country since 2013, to leave as a result of mistrust between the government and the mission. The UN Security Council subsequently voted to terminate the mission and completed its withdrawal in December 2023. On the Current Path, it is projected that Mali's score on the governance security index will reach 0.66 in 2030 and 0.72 by 2043, compared to the average of 0.70 for low-income African countries, by 2043.

Regarding governance capacity, Mali's score in 2023 of 0.29 was about 24.5% higher than the average of low-income Africa. The most important reason is that government revenue as a percentage of GDP for Mali (without aid) was 13.0% of GDP, exceeding the average of 8.2.% of GDP of low-income countries in Africa. Despite the progress in government capacity, the country is still lagging behind in several aspects of governance capacity such as fighting corruption. It currently ranks 136th out of 180 countries globally on the 2023 Transparency International Corruption Perception Index (CPI) with a score of 28. This is a seven-point decline from its peak of 35 in 2015. Most of the corruption cases occur through procurement. Corruption permeates every state institution in the country, creating mistrust among the public. The 2019 global corruption barometer reports that 60% of Malians (almost double what was recorded in 2015) believed corruption has increased in the last 12 months. The high level of corruption is likely to weaken government effectiveness in the country.

Similarly, the country's performance on the World Bank government effectiveness index is below that of its peers. This index 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. Its score of 1.35 in 2023 is slightly below the average for low-income countries in Africa. On the Current Path, Mali's progress on the governance capacity index will be slower than the average for its income-group peers reaching 0.31 compared to 0.25 in 2030. By 2043, its score of 0.34 will be slightly above the average for low-income countries in Africa estimated at 0.32.

Unlike the security and capacity index, Mali's performance on the Governance Inclusion Index is slightly lower than its income-group peers in Africa. In 2023, Mali's score of 0.442 on the inclusion index, was almost at par with the average for its income-group peers on the continent. The main reason for the poor performance on the inclusion is backsliding on its democratic score since the 2020 coup. For example, Mali's score on the V-Dem Electoral Democracy Index declined from 0.52 in 2018 to 0.23 in 2023, reflecting ongoing delays in the transition back to constitutional governance. Another reason for the poor performance on the inclusion index is the low women representation and inclusion in the country. The 2020 Gender Inequality Index also ranked Mali 184th globally with gender-based violence and inequality still prevalent in the country. Historically, female representation in government has been low in Mali and consistently below the 30% global benchmark. For instance, women's representation in the national parliament has declined since its peak of 12% in the 1990s. Between 2010 and 2013, only 9.5% of seats in the national parliament were occupied by women.

The marginalisation of women in government led to the enactment of the 2015 Gender Quota Law that requires at least 30% of females in nominated or elected positions. As a result, the 2020 elections witnessed the highest female representation of 29% in the national parliament. Even with the quota rule, women are still underrepresented in almost all

political spheres. Women make up 23.6% of the national government, 1% and 5% of interim administration at the regional and district levels, respectively. Also, only 6% of the National Council for Security Sector Reforms, 3% of the National Commission on Disarmament, Demobilization and Reintegration and 20% of the Truth, Justice and Reconciliation Commission are women. On the Current Path, Mali will progress slowly on the Governance Inclusion Index to reach 0.45 in 2030 and 0.51 by 2043, but will still be slightly below the average of low-income countries in Africa.

Chart 27: Composite governance index in the Current Path and Governance scenario, 2023-2043

Mali

| Capacity | Inclusion | Security |

		0.89
		0.72
0.44	0.64	0.64
0.36	0.51	
0.29	0.44	
2023 2043	2023 2043	2023 2043

Capacity, Current Path Inclusion, Current Path Security, Current Path
Capacity, Governance scenario Inclusion, Governance scenario Security, Governance scenario

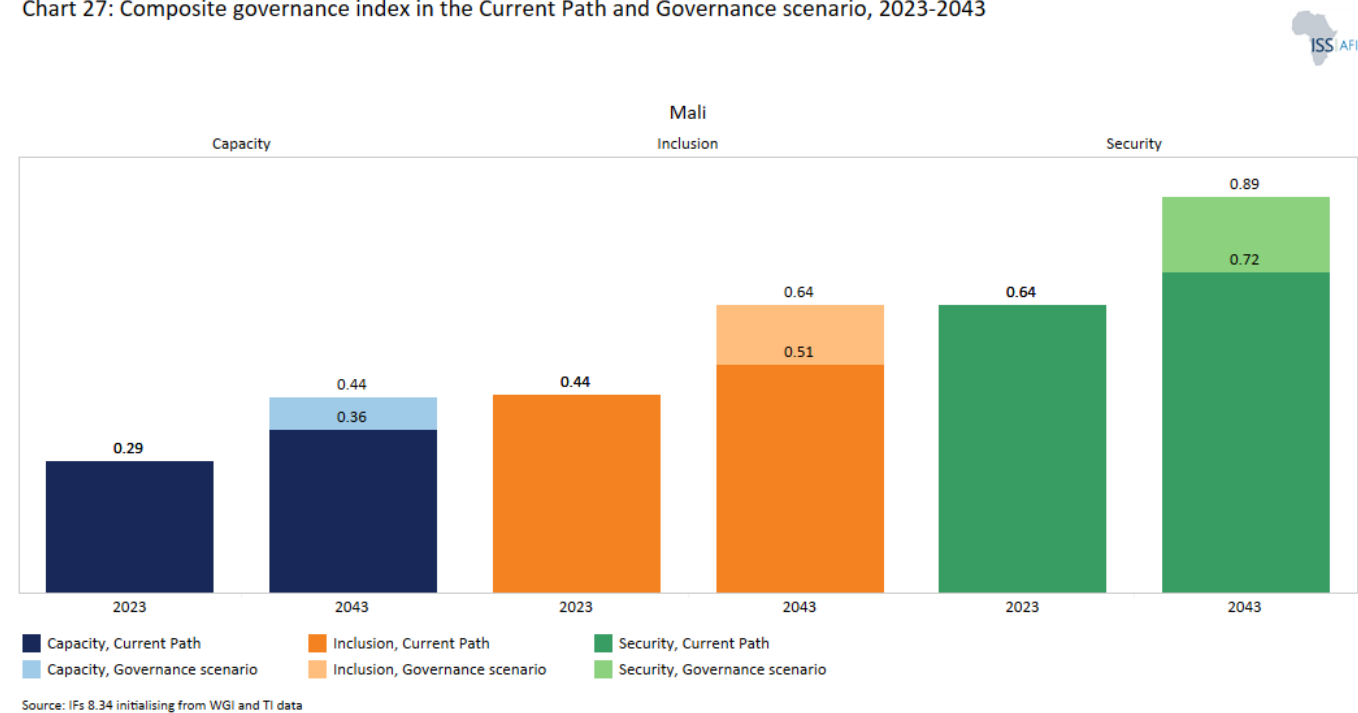Source: IFs 8.34 initialising from WGI and TI data

Chart 27 presents security, capacity and inclusion index for the Current Path versus the Governance scenario, for 2023 and 2043.

In the Governance scenario, Mali's score on the governance security index will improve to 0.73 in 2030 and 0.89 by 2043; at which point it will be about 23% above the Current Path by 2043 and about the average of low-income Africa in the same year. Governance capacity will also improve in the Governance scenario, with its score increasing to 0.65 in 2030 and 0.70 by 2043, constituting a 59.4% improvement above the Current Path in 2043. In terms of inclusion, the Governance scenario will improve Mali's score on the Governance Inclusion Index to 0.54 in 2030 above the Current Path of 45.3. By 2043, Mali's score on inclusion will be 22% above the Current Path and the average of low-income countries in Africa in 2043.

Endnotes

1. The data on agricultural production and demand in the IFs forecasting platform initialises from data provided on food balances by the Food and Agriculture Organization (FAO). IFs contains data on numerous types of agriculture but aggregate its forecast into crops, meat and fish, presented in million metric tons.

2. Trade openness measures the extent to which a country is engaged in the global trading system. This is calculated using the sum of the total exports and the total imports over the total GDP.

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