



Mali

Annexure: List of Interventions within IFs

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Mali Scenario

Project Data File

This report used IFs version 7.84. All interventions start in 2024, interpolate to 2033 and then are maintained at that level unless indicated otherwise.

All interventions start in 2024 and interpolate to 2033 and then maintained afterwards unless otherwise stated.

Name and Description	Adjustments within IFs 7.84	Benchmarking and Justification
GDP growth rates (gdprext)	2022 = 3.7%; 2023 = 5.0%; 2024 = 5.1%	Current Path adjustment based on the recent IMF GDP growth projections for Mali.
Governance scenario		
Democracy multiplier (democm)	Interpolate to 1.12	To improve the democracy score in Mali. Although Mali's democracy score is above the average for low-income African countries, it ranks

		<p>ninth out of the 23 low-income countries in Africa and lags behind countries such as Guinea Bissau and Sierra Leone. Also, the 2022 coup in the country has the potential to derail democratic progress. Historically, Burkina Faso improved its democracy by 60% between 2008 and 2018. In the Governance scenario, democracy in Mali will improve by 14.8% between 2024 and 2033. By 2043, Mali's score in the scenario will be 17% above the Current Path forecast and 55.2% higher than the average for low-income countries in Africa. However, this will still be behind Sierra Leone.</p>
Economic freedom (econfreem)	Interpolate to 1.12	<p>Rwanda improved its score by about 23% between 2000 and 2010. Mali currently ranks 15th out of the 23 low-income countries and by 2043 will deteriorate to 17th position on the economic freedom index by the Fraser Institute. The average score for Mali increases by about 16.5% between 2024 and 2033 in this intervention. By 2043, Mali's score on the economic freedom index will be 17.3% more than the Current Path forecast and about 11% above average for low-income countries in Africa. However, Mali's score will still be below countries such as Uganda, Rwanda and The Gambia.</p>
Gender Empowerment (gemm)	Interpolate to 1.25	<p>Between 1995 and 2009, gender empowerment improved by 126% in Ethiopia. Mali currently ranks 19th out of the 23 low-income countries on the UNDP gender empowerment measure. Between 2024 and 2033, the intervention will improve gender empowerment by 24.1%, which is above the Current Path forecast but will still be 15.3% behind the average of low-income African countries.</p>

<p>Government corruption multiplier (govcorruptm)</p>	<p>Interpolate to 1.15</p>	<p>Mali currently ranks 137th (out of 180 countries) globally on the corruption perception index (CPI) with a score of 28. This is a seven-point decline from its peak of 35 in 2015. As a benchmark, Tanzania improved its transparency by 58% between 1998 and 2008. The intervention improves transparency in Mali by about 23.4% between 2024 and 2033. By 2043, Mali's score will be 27.1% higher than the Current Path forecast and 35.5% above the average for low-income countries in Africa. Nonetheless, Mali's performance on this index in the scenario will still be lower than Rwanda and Burkina Faso.</p>
<p>Government regulatory quality (govregqualm)</p>	<p>Interpolate to 1.15</p>	<p>Between 1996 to 2006, Rwanda increased its average score on the governance regulatory quality index by about 59%. Mali has the fourth highest score on the governance regulatory quality index behind Rwanda, Uganda and Burkina Faso. However, its Current Path progress will be slow compared to its peers, thereby moving it to the seventh position by 2043. The scenario improves government regulatory quality by 5.5% from 2024 to 2033. By 2043, Mali's score on the government regulatory score will be above the average for low-income countries but lower than income-group peer countries such as Rwanda.</p>
<p>Government effectiveness multiplier (goveffectm)</p>	<p>Interpolate to 1.15</p>	<p>Historically, Rwanda improved its government effectiveness by 66% from 1996 to 2006. Mali currently ranks 11th rank out of the 23 low-income countries on the World Bank government effectiveness index. The intervention increases Mali's score by 47.2% between 2024 and 2033. However, it will still be behind the performance of Rwanda by 2043.</p>

State failure/internal war, addition – probability (sfintlwaradd)	Interpolate to 0.4	Between 1990 and 2000, Rwanda reduced the probability of state failure by 100%. Likewise, Uganda was able to reduce it by 100% between 2006 and 2016. There is a high level of insecurity in Mali from possible threats of terrorism and political instability. This intervention reduces the risk of internal war in Mali.
State failure/internal war, multiplier – magnitude (sfintwarmagm)	Interpolate to 0.8	Between 1990 and 2000, Rwanda reduced the probability of state failure by 100%. Likewise, Uganda was able to reduce it by 100% between 2006 and 2016. There is a high level of insecurity in Mali from possible threats of terrorism and political instability. This intervention reduces the risk of internal war in Mali.
State failure through instability (abrupt regime change). Event occurrence (SFINSTABALL)	Africa: Initial value in 2017 set to 0.05	Between 1990 and 2000, Rwanda reduced the probability of state failure by 100%. Likewise, Uganda was able to reduce it by 100% between 2006 and 2016. There is a high level of insecurity in Mali from possible threats of terrorism and political instability. This intervention reduces the risk of internal war in Mali.
State failure through instability (abrupt regime transition), magnitude (SFINSTABMAG)	Africa: Initial value in 2017 set to 0.1	Between 1990 and 2000, Rwanda reduced the probability of state failure by 100%. Likewise, Uganda was able to reduce it by 100% between 2006 and 2016. There is a high level of insecurity in Mali from possible threats of terrorism and political instability. This intervention reduces the risk of internal war in Mali.
Demographics and Health scenario		

<p>Contraception use multiplier (contrusm)</p>	<p>Interpolate to 1.4</p>	<p>To reduce the total fertility rates among women in Mali. The use of modern contraceptives among fertile women in Mali is very low, currently estimated at about 19%, and ranks 17th below the average among the 23 low-income countries in Africa. Consequently, the total fertility rate among fertile women in Mali is the second highest in African countries only below Niger.</p> <p>Rwanda increased modern contraceptive use from 17% in 2005 to 52% in 2015. The intervention increases contraception use by 72% between 2024 and 2033. By 2043, modern contraceptive use in Mali will reach 49.5% and will be 44% above Current Path close to the average for its income-group peers in Africa.</p>
<p>Population with access to piped water (watsafem)</p>	<p>Interpolate to 1.2</p>	<p>Between 2010 and 2020, Ethiopia increased its population with access to piped water by 93%, and DR Congo by nearly 70%. Mali currently ranks the third highest in access to piped water connection among the low-income countries in Africa at 48% behind The Gambia and Eritrea. However, on the Current Path, the country is projected to fall to eighth position. The intervention improves access to piped water by 23.7% between 2024 and 2033. By 2043, about 70% of Malians will have access to piped water in this scenario compared to the 62% in the scenario. Although this will be higher than the average for low-income countries, it will still be behind the access rate in countries such as The Gambia, Eritrea and Rwanda.</p>
<p>Population with access to improved sanitation (sanitation-improved)</p>	<p>Interpolate to 1.2</p>	<p>Mali improved its population with access to improved sanitation by 87% between 2000 and 2010. With about</p>

		<p>44% of the population having access to improved sanitation, Mali ranks fourth among low-income countries in Africa. However, by 2043, Mali's performance will drop to seventh position on the Current Path. In this scenario, Mali will increase its population with access to improved sanitation by an extra 18.7% from 2024 to 2033 such that by 2043, 76.5% of Malians will have access to improved sanitation. Despite the progress in the scenario, it will still be lower than countries such as Rwanda, Eritrea and The Gambia in 2043.</p>
Maternal mortality ratio multiplier (matmortatiom)	Interpolate to 0.75	<p>Between 2000 and 2010, Rwanda reduced its maternal mortality rate by over 200%. The maternal mortality ratio in Mali is above the average for low-income countries in Africa and ranks 10th highest among the group. The intervention will reduce the maternal mortality rate in Mali by 86.4% between 2024 and 2033. By 2043, the maternal mortality rate in Mali will be 50% lower than on the Current Path. However, this will still be higher than 11 of its income-group peers such as Rwanda, Mozambique and Malawi.</p>
Mortality for children under five (hlmortcdchldm)	Interpolate to 0.85	<p>Between 2000 and 2010, Rwanda reduced the under-five mortality rates by over 200%. Mali has the third highest under-five mortality rate among the 23 low-income countries in Africa. The intervention will reduce under-five mortality in Rwanda by 88.7% between 2024 and 2033. By 2043, the under-five mortality rate will be 30.5% lower than the Current Path and 21.2% below the average for low-income countries in Africa. However, it will still be higher than seven other countries such as Eritrea and Rwanda.</p>

Mortality multiplier (hlmortm) (AIDS)	Interpolate to 0.85	Burkina Faso reduced AIDS-related deaths by 66% between 2004 and 2014. The Demographics and Health scenario will reduce AIDS-related deaths in Mali by 72.1% between 2024 and 2033. By 2043, death from AIDS-related deaths in Mali will be 31.3% below the Current Path forecast.
Mortality multiplier (hlmortm) (diarrhoea)	Interpolate to 0.9	In the past, Uganda was able to reduce mortality from diarrhoea by 42% between 1998 and 2008. The intervention will reduce death from diarrhoea in Mali by 37.3% between 2024 and 2033. By 2043, death from diarrhoea in Mali will be 29.2% lower than in the Current Path forecast.
Mortality multiplier (hlmortm) (malaria)	Interpolate to 0.85	Between 2007 and 2017, Guinea was able to reduce mortality from malaria by 72%. The intervention will reduce deaths from malaria in Mali by 108% between 2024 and 2033. By 2043, deaths from malaria in Mali will be 49.5% lower than the Current Path forecast.
Mortality multiplier (hlmortm) (respinfection)	Interpolate to 0.9	Between 2010 and 2020, Malawi reduced deaths from respiratory infection by 40%, and the intervention is poised to decrease deaths in Mali by 91.3% between 2024 and 2033. By 2043, deaths from respiratory infections in Mali will be 30.3% lower than in the Current Path forecast.
Mortality multiplier (hlmortm) (diabetes)	No intervention	Mali has the lowest rate of diabetes among the 23 low-income countries in Africa.
Mortality multiplier (hlmortm) (OthCommumDis)	Interpolate to 0.9	Between 2007 and 2017, Ethiopia reduced deaths from other communicable diseases by about 40%. The intervention will reduce deaths from communicable diseases

		in Mali by 63.8% between 2024 and 2033. By 2043, deaths from other communicable diseases will be 48% lower than the Current Path forecast.
Mortality multiplier (hlmortm) (OtherNonComm)	Interpolate from 1 to 0.75	Malawi reduced deaths from other non-communicable diseases by 21% between 1994 and 2003. The intervention will reduce deaths from other non-communicable diseases by 28.7% between 2024 and 2033. By 2043, deaths from other non-communicable diseases will be 39.3% lower than the Current Path.
Mortality multiplier, SAM prevalence (malnchpsamm)	Interpolate to 0.85	Between 2006 and 2014, severe acute malnutrition (SAM) prevalence declined by over 259% in Togo. In this intervention, SAM prevalence declines by 18.8% between 2024 and 2033. By 2043, SAM prevalence in Mali in the scenario will be 28% lower than the Current Path.
Education scenario		
Lower secondary, vocational share, additive factor, decimal rate (edseclowrvocadd)	Interpolate to 5	Burkina Faso increased vocational training in lower secondary schools by 115% between 2009 and 2019. (No data.)
Upper secondary, vocational share, additive factor, decimal rate (Edsecupprvocadd)	Interpolate to 4	Coming from a low base of 2.6, Ethiopia increased its vocational training share of upper secondary education from 21.56% to 59.20% between 2001 and 2011. The upper secondary vocational share is above the average for low-income countries in Africa but below Ethiopia. The intervention will see Mali improve its upper secondary vocational training by 11% between 2024 and 2033, and by 2043 Mali will be on par with Ethiopia.
Tertiary, sci-eng share of graduates,	Interpolate to 6	Increase in science and engineering

<p>additive factor, decimal rate (edterscienshradd)</p>		<p>graduates is necessary for quality human capital for sustainable growth and development. Between 2004 to 2016, the share of science and engineering graduates in Mali increased by 73.8%. Just like many African countries, the share of graduates with science and engineering backgrounds is low, estimated to be about 17%. The intervention pushes the science and engineering graduate share in Mali to about 24% close to the rate in Sudan but lower than the rate in Eritrea.</p>
<p>Primary net intake rate multiplier (total) (edpriintnm)</p>	<p>Interpolate to 1.1</p>	<p>To increase net primary enrolment. Mali has the fifth lowest net enrolment rate among the 23 low-income countries in Africa. Niger increased primary net intake by 54% between 2007 and 2017. In this scenario, net intake will increase by 13.6% between 2024 and 2033. As a result, net enrolment increases by 19% from 2024 to 2033. By 2043, net enrolment in Mali will reach 85.6% close to the 87.2% average for low-income countries in Africa.</p>
<p>Primary, survival rate, multiplier (total) (edprisum)</p>	<p>Interpolate to 1.05</p>	<p>The primary survival rate in Mali is currently the fifth highest among the 23 low-income countries. However, on the Current Path, Mali is set to progress slower than its peers, thereby dropping to 11th position by 2043. Malawi improved its survival rate at the primary level by 60% between 2004 and 2013. The intervention will increase the survival rate in Mali by 9.6% between 2024 and 2033 such that by 2043, the survival rate in Mali will reach 84% instead of the 80% projected in the Current Path forecast. However, this will still be lower compared to the rates in six other low-income African countries such as Eritrea, The Gambia and Liberia.</p>

Lower secondary transition rate (edseclowrtran)	No intervention	Between 2000 and 2010, Niger improved its lower secondary transition rate by 45%. Mali had the second highest transition rate at 99.4% in 2019; it will attain 100% by 2024 and remain so throughout the forecast period. As such, no intervention was needed in this regard.
Upper secondary transition rate, multiplier (edsecuprtranm)	Interpolate to 1.1	Lower to upper secondary transition rate in Mali at 83.1% is ranked 13th among low-income countries in Africa. On the Current Path, Mali will make progress slowly to only 84.8% by 2043. Between 1994 to 2005, the upper secondary transition rate almost tripled. In this scenario, the upper secondary transition rate will increase by 9.2% from 2024 to 2033. By 2043, upper secondary transition will reach 97.7% in the scenario, close to countries such as DR Congo that reach 100% transition rate as early as 2033.
Lower, secondary, graduation rate, multiplier (edseclowrgram)	Interpolate to 1.25	Lower secondary graduation rate in Mali is low, estimated at 31.1% in 2019 and ranking 16th among the 23 low-income groups in Africa. On the Current Path, this will slowly improve to only 48.2% by 2043. The intervention pushes lower secondary graduation rates by 42% between 2024 and 2033. By 2043, the lower secondary graduation rate in Mali of 60% will be above the low-income average but still below the levels in Eritrea and The Gambia.
Upper secondary, graduation rate, multiplier (total) (edsecupprgram)	Interpolate to 1.25	Upper secondary graduation rate in Mali is very low estimated at 18.8% in 2019 ranking 12th among the 23 low-income groups in Africa. On the Current Path, this will slowly improve to only 36% by 2043. This intervention pushes the upper

		secondary graduation rate by 50% between 2024 and 2033. By 2043, it will reach 41.5% above the average for low-income countries but still below the rates in countries such as Rwanda, Togo, Eritrea and The Gambia by 2043.
Tertiary, intake rate, multiplier, total (edterintm)	Interpolate to 1.2	Tertiary enrolment in Mali is very low. Currently, only 6.4% of people within the age group are enrolled in tertiary institutions in Mali, and it will only improve to about 18.3% by 2043 on the Current Path. Madagascar improved its tertiary intake by 61% between 2007 and 2017. From a low base, the intervention will see Rwanda improve its tertiary intake by 133% between 2024 to 2033. By 2043, gross tertiary enrolment in Mali will improve to 29%—close to the rate in Liberia.
Tertiary, graduation rate multiplier (edtergradm)	Interpolate to 1.3	Only about 4% of tertiary students are estimated to graduate in Mali and it is projected to improve slowly to 9% by 2043 on the Current Path. Between 2007 and 2017, Madagascar improved graduation from tertiary education by 160%. In this scenario, Mali will witness an improvement in the tertiary graduation rate such that by 2043, it will be about 11% close to the average for low-income countries in Africa.
Quality, multiplier on primary (total) (edqualpriallm)	Interpolate to 1.2	Primary test scores are low in Mali averaging about 29.2 out of 100 for mathematics, reading and science. This score is expected to improve slowly to only 33.7% by 2043 on the Current Path. Burkina Faso improved quality at primary level by 31% between 2008 and 2018. The intervention improves quality by 21.8% from 2024 to 2033. By 2043,

		the average test score for primary students in Mali will be 39, which is on par with the level in Togo.
Quality, multiplier on secondary (total) (edqualsecallm)	Interpolate to 1.2	The average test score for secondary students of 32.8 out of 100 in Mali is the second lowest among the 23 low-income countries in Africa, only better than Niger. The intervention increases the quality of secondary education by 24.9% between 2024 and 2033, which is above the average of low-income African countries. By 2043, the average secondary test score in Mali of 44.5 will be above the average for low-income African countries but slightly below the levels in Togo and Liberia.
Primary, gender parity time for intake, years (edprigndreqintn)	Interpolate to 10	Currently, there are 93 girls for every 100 boys enrolled in primary schools. This is to create a more aggressive gradient and pushes gender parity rates closer to the 1-to-1 female-to-male goal for intake at the primary level. As a result, gender parity in net primary enrolment is achieved as early as 2026 and maintained until 2043.
Lower sec, gender parity time for transition, years (edseclowrgndreqtran)	Interpolate to 10 in 2024 to 2033	There is gender inequality in lower secondary enrolment. For every 100 boys enrolled in lower secondary, there are 89 girls. This is to create a more aggressive gradient and pushes gender parity rates closer to the 1-to-1 female-to-male goal for intake at the lower secondary level. As a result, gender parity in gross lower secondary enrolment occurs by 2034 in the scenario for Mali.
Upper secondary gender parity time for transition, years (edsecupprgndreqtran)	Interpolate to 10	There is gender inequality in secondary enrolment. For every 100 boys enrolled in lower secondary, there are 72 girls. This is to create a more aggressive gradient and pushes

		gender parity rates closer to the 1-to-1 female-to-male goal for intake at the upper secondary level. Owing to this, gender parity in gross upper secondary enrolment improves significantly reaching 98 girls' enrolment for every 100 boys by 2043 in the scenario for Mali.
Tertiary, gender parity time for intake, years (edtergndreqint)	Interpolate to 10	The number of males enrolled in tertiary level is almost twice the enrolment for females at the same level implying 50 females for every 100 males enrolled. This is to create a more aggressive gradient and pushes gender parity rates closer to the 1 to 1 female-to-male goal for intake at the tertiary level. As a result, gender parity in gross tertiary enrolment occurs by 2040 in the scenario for Mali.
Agriculture scenario		
Yields multiplier (ylm)	Interpolate to 1.25	Yield per hectare in Mali is low, ranking 13th among low-income countries in Africa. It is less than half of what is in Rwanda and Malawi. Mali improved yields per hectare by 100% between 2009 and 2019. The intervention will improve agricultural yield in Mali by 42% between 2024 and 2033. By 2043, the average yields of 5.4 tons per hectare will be higher than the average of low-income countries in Africa but significantly lower than levels in countries such as Rwanda and Malawi.
Multiplier on land actually irrigated (landirareaactualm)	Interpolate to 1.2	Mali ranks fourth after Sudan, Ethiopia and Madagascar as the country with the largest irrigated land area among the 23 low-income countries in Africa. The intervention improves land irrigated by 36% between 2024 and 2033.

Multiplier on land equipped for irrigation (landirareaequipm)	Interpolate to 1.15	Mali ranks fourth after Sudan, Ethiopia and Madagascar as the country with the largest land equipped for irrigation among the 23 low-income countries in Africa. Ethiopia improved its land equipped for irrigation significantly by 455% between 2002 and 2010. This intervention improves land equipped for irrigation by 15.6% between 2024 and 2033. By 2043, land equipped for irrigation in Mali of 525 per 1 000 hectares will be higher than the average for low-income countries in Africa but below the levels in Sudan, Madagascar and Ethiopia.
Loss rate of agricultural production (crop) (aglossprodcm)	Interpolate to 0.8	To reduce agricultural loss and waste as a share of production. Agricultural loss and waste as share of production is estimated at 26.2% for Mali. Indeed, 10.3% of the production is estimated as post-harvest losses for crops. The intervention will reduce crop production loss by 26% between 2024 and 2033. By 2043, Mali will reduce agricultural production loss lower than its peers in low-income Africa but below the level in Eswatini.
Loss rate of agriculture as moves from producer to consumer multiplier (crop) (aglosstransm)	Interpolate to 0.8	Agricultural loss and waste as a share of production is estimated at 26.2% for Mali. Indeed, 12.7% of the production is estimated as transmission losses for crops. The intervention will reduce food transmission loss by 31.3% between 2024 and 2033, and by 2043 Mali will reduce food waste lower than average low-income African peers but higher than Eswatini, Somalia, Eritrea and South Sudan.
Per capita calorie demand multiplier (total) (clpcm)	Interpolate to 1.05	Mali has the highest per capita calorie demand among the low-income countries globally and the 11th highest in Africa. Between 2009 and

		2019, calories available in Sudan increased by 56%. The intervention will increase Mali's available calories by 6.7% between 2024 and 2033. By 2043, calories per day available in Mali will be higher than the average in Africa but behind countries such as Ghana, Mauritius and Seychelles.
Water withdrawal (ground) (waterwithdrawalm)	Interpolate to 1.05	Dryland conditions, variable rainfall and non-perennial rivers necessitate access to sustainable water resources such as groundwater. High rainfall bands with fewer meteorological droughts can utilise either rainwater harvests or surface water sources and therefore not increase. Mali as a country with dryland conditions (steppe, desert) and is faced with repeated and severe rainfall variability and meteorological droughts, which necessitate high interventions.
Forest protection multiplier (forest)	Interpolate to 1.02	Total forest cover in Mali was estimated to be about 10.8% of total land area. For the sustainability of agriculture this intervention helps in reducing the rate of conversion for agricultural land. This ensures that deforestation is stopped and slowly reforestation takes shape over the course of decades. Between 1990 and 2000, Mali lost an average of 100 000 hectares of forest per year. Also, between 1990 and 2005, Mali lost 10.7% of its forest cover, or around 1 500 000 hectares.
Manufacturing scenario		
Government-to-household welfare transfers (govhhtrnwelm) (unskilled)	Interpolate to 1.4	Transfers to households are necessary to smoothen offset the negative redistribution effect of manufacturing. Government-to-household welfare transfers in Mali are very low, ranked

		<p>seventh among Africa's low-income countries and less than a third of the group's average. From a low base, the intervention will push government household transfers by 94.4% from 2024 to 2033. By 2043, the Malian government will make transfers to the household equivalent to 2% of GDP but will just be a third of the average of its income-group peers.</p>
<p>Government regulation of business index multiplier (govbusregindm)</p>	<p>Interpolate to 0.85</p>	<p>Reducing bureaucratic government regulation is necessary for promoting manufacturing in Mali. This intervention is to improve the business environment to stimulate private investment in the manufacturing sector to enhance private sector led-growth. Between 1996 to 2006, Rwanda increased its average score on the governance regulatory quality index by about 59%. Mali has the fourth highest score on the governance regulatory quality index behind Rwanda, Uganda and Burkina Faso. However, its Current Path progress will be slow compared to its peers, thereby moving to the seventh position by 2043. The scenario improves government regulatory quality by 5.5% from 2024 to 2033. By 2043, Mali's score on the government regulatory score will be above the average for low-income countries but lower than income-group peer countries such as Rwanda.</p>
<p>Investment in manufacturing sector (idsm)</p>	<p>Interpolate to 1.1</p>	<p>Investment in manufacturing in Mali is low, currently ranking 11th among the 23 low-income countries in Africa. Interventions are based on the African industrialisation index produced by the African Development Bank. According to the index, countries are divided into five quintiles by rank top, upper-middle, middle, low-middle and bottom. Mali is ranked among the low-middle</p>

		<p>quintile countries category signalling low manufacturing in the country. As such, the intervention is to promote investment in the manufacturing sectors in the country. The intervention improves the manufacturing investment share of GDP by 16.2% in 2024 to 19.6% in 2033. By 2043, Rwanda's projected manufacturing share of GDP will surpass the average of its peers but on par with the Current Path average for Uganda.</p>
Increase research development activities (total) (randdexpm)	Interpolate to 1.1	<p>Building technological capability through research and development (R&D) is crucial for a robust manufacturing sector. It stimulates innovation, increases productivity and improves the quality of products. Mali spending as a share of GDP is slightly below the average for its income-group peers in Africa. The intervention improves the R&D spending as a share of GDP by 8% between 2024 and 2033 from a low base, and by 2043 the R&D share of GDP in Mali will be 7.6% higher than the average for low-income countries but lower than Togo and DR Congo.</p>
Increase government revenue (govrevm)	Interpolate to 1.05	<p>To increase the government's ability to support industrialisation and provide social grants to mitigate the initial increase in inequality associated with rapid structural transformation (Kutznet tension/developer's dilemma). Government revenue as a percentage of GDP in Mali is low like most African countries, estimated to be about 19.5% in 2022 by the World Bank. The intervention will push government revenue to GDP to 24% by 2043, which is above the average of low-income countries but below countries such as Rwanda, Eritrea and Liberia.</p>

<p>Total labour participation rate (male & female), female more aggressive (labparm)</p>	<p>Male: Interpolate to 1.1 Female: Interpolate to 1.15</p>	<p>Labour participation rate in Mali is slightly below the average for low-income countries in Africa. Historically, male labour participation rates have been higher than female rates in Mali. For every 100 males that are in the labour market, there are only 76 females. This is below the average for low-income countries where there are 84 females for every 100 males that participate in the labour market. The intervention will push both male and female labour participation by 13.3% between 2024 and 2033. By 2043, labour participation rate in Mali will be 84% close to Eritrea and slightly below the rate in Madagascar. Additionally, the gender gap will be closed significantly such that by 2043, there are 90 females for every 100 males in the labour market.</p>
<p>Large Infrastructure and Leapfrogging scenario</p>		
<p>Capital cost to output ratio in energy – qem – Q (OthRenew)</p>	<p>Interpolate to 0.8</p>	<p>Lower energy costs to output will enhance the production of more energy to fuel economic growth and development. The intervention will triple renewable energy production from a very low base between 2024 to 2033. By 2043, renewable energy production will constitute 64% of total production in the scenario instead of 52% in the Current Path forecast.</p>
<p>Capital cost to output ratio in hydro (qem – hydro)</p>	<p>Interpolate to 0.8</p>	<p>Lower energy costs to output will enhance the production of more energy to fuel economic growth and development. By 2043, renewable energy production will constitute 64% of total production in the scenario instead of 52% in the Current Path.</p>
<p>Increase production of hydro energy (enpm – hydro)</p>	<p>Interpolate to 1.2</p>	<p>Mali is endowed with plentiful solar and hydro potential. The country has</p>

		<p>an estimated 800 MW of hydroelectric power, potentially unlimited solar energy and over 300 MW of biomass. By 2043, renewable energy production will constitute 64% of total production in the scenario instead of 52% in the Current Path forecast.</p>
Energy production multiplier for other renewables – enpm (OthRenew)	Interpolate to 1.2	<p>Mali is endowed with plentiful solar and hydro potential. The country has an estimated 800 MW of hydroelectric power, potentially unlimited solar energy and over 300 MW of biomass. By 2043, renewable energy production will constitute 64% of total production in the scenario instead of 52% in the Current Path forecast.</p>
Electricity access multiplier urban-infraelecaccm (urban)	Interpolate to 1.05	<p>Access to electricity in urban areas is positively correlated with income across Africa. Mali has a high urban electricity access rate currently estimated at 91.2% making it the fourth highest among the 23 low-income countries after Rwanda, Ethiopia and Togo. Burkina Faso improved urban electricity access by 45% between 2009 and 2019. The intervention improves urban electricity access by 10.3% between 2024 and 2033, reaching 100% in 2038. Ethiopia will reach 100% urban access by 2022.</p>
Electricity access multiplier rural – infraelecaccm (rural)	Interpolate to 1.4	<p>Access to electricity in urban areas is positively correlated with income across Africa. While the electricity access rate is very high in urban centres, it is very low in rural areas. Currently, only 15% of rural dwellers in Mali have access to electricity indicating a huge disparity between urban and rural areas. Between 2009 and 2019, Eritrea improved rural access to electricity by 99%. Rwanda also increased its rural access to</p>

		<p>electricity from 1.1% in 2011 to 38.2% in 2019. The intervention improves rural access by 97.5% between 2024 and 2033. By 2043, rural electricity access rate will reach 56.4%, which is above the average for low-income countries but lower than the rates in countries such as Eritrea, Rwanda and Ethiopia.</p>
<p>Electricity transmission and distribution loss (infraelectranlossm)</p>	<p>Interpolate to 0.8</p>	<p>Historical data indicates that transmission and distribution loss is highest at low income. About 17% of all electricity generated in Mali is lost during transmission and distribution. Between 2001 and 2011, Sudan reduced its electricity transmission and distribution losses by 67%. This intervention will reduce electricity transmission losses by 23% between 2024 to 2033 such that by 2043, transmission losses in Mali will constitute 13.4% of production. This will be below the average of low-income countries but still higher than rates in South Sudan, Eritrea and Sudan.</p>
<p>ICT mobile broadband multiplier (ictbroadmobilm)</p>	<p>Interpolate to 1.1</p>	<p>From a low base, Uganda improved mobile broadband subscriptions by 134.7% between 2010 and 2017. Mali has the fifth highest mobile broadband subscriptions among low-income countries. The intervention will improve mobile broadband subscriptions by 128% between 2024 and 2033. By 2043, mobile broadband subscriptions will reach 156 subscriptions per 100 people—slightly above the rate in Burkina Faso.</p>
<p>ICT broadband multiplier on the cost of adding a connection (ictbroadcostm)</p>	<p>Interpolate to 0.9</p>	<p>A reduced cost of adding a connection improves connectivity to ICT broadband infrastructure. Mali will need more broadband connections to leverage the opportunities that digitalisation</p>

		offers. A reduction in the cost of mobile broadband will make it affordable and improve access.
Cost of adding an ICT mobile broadband connection (ictmobilbroadcostm)	Interpolate to 0.9	A reduced cost of adding a connection improves connectivity to ICT broadband infrastructure. Mali will need more broadband connections to leverage the opportunities that digitalisation offers. A reduction in the cost of fixed broadband will make it affordable and improve access.
ICT fixed broadband multiplier (ictbroadm)	Interpolate to 1.2	Like many African countries, fixed broadband subscription in Mali is currently estimated at 1.6 subscriptions per 100 people. Togo improved its connection by 283.5% between 2008 and 2018. From a very low base, the intervention improves fixed broadband subscriptions by 318% between 2024 and 2033. By 2043, the intervention pushed Mali to reach 39 subscriptions per 100 people but will be lower than the rates in countries such as Somalia, The Gambia and Rwanda.
Increase population with Internet access	Interpolate to 1.2	Between 2009 and 2019, The Gambia increased its population with access to the Internet from a paltry 7.6% to 51%. Only 26% of Mali's population has access to the Internet. This is half of what it is in The Gambia, which is the highest among the 23 low-income African countries. The intervention will increase the population with access to the Internet by 12.4% from 2024 to 2033 reaching about 23% by 2043—close to the rates in countries such as Eritrea, Burkina Faso, Togo and Guinea.
Paved roads (Infraroadpavedpcntm)	Interpolate to 1.1	Improved road transportation networks are an important driver of growth. Guinea Bissau increased

		<p>paved road length from 9.4% in 1993 to 27% in 2003. The intervention improves the paved road share of total roads by 16.7% between 2024 and 2033. By 2043, the intervention will push paved roads in Mali to constitute about 36% of total road networks in the country, almost on par with the average of low-income countries in Africa.</p>
Informal labour contribution to employment (labinformshrm)	Interpolate to 0.9	<p>The informal sector in Mali is huge. It currently contributes about 33% to GDP and employs about 81% of the economically active population. Formalising the economy and reducing informal labour will raise government revenue and increase GDP. The intervention reduces informality by 11.8% between 2024 and 2033. By 2043, the informal sector contribution will decline to 64% of GDP but will be above the average of low-income countries in Africa.</p>
Reduce informality (gdpinformshrm)	Interpolate to 0.9	<p>The informal sector in Mali is huge. It currently contributes about 33% to GDP and employs about 73% of the economically active population. Formalising the economy and reducing informal labour will raise government revenue and increase GDP. The intervention reduces informality by 18.2% between 2024 and 2033. By 2043, the informal sector contribution will decline to 25.6% of GDP, which is slightly below the average of low-income countries in Africa.</p>
AfCFTA scenario		
Export shift as a result of the promotion of exports manufacturing ratio (xshift)	Interpolate to 0.015	<p>In the World Bank policy research paper, export promotion agencies for developing countries will have an elasticity of 8%. Manufacturing export</p>

		value as a per cent of GDP improves by 23.1% between 2024 and 2033. By 2043, Mali projects a manufacturing export share of GDP of 29%, which will be higher than the average of low-income Africa but below Somalia and Chad.
XSM-Export multiplier – Agriculture	Interpolate to 1.2	Agricultural export share of GDP albeit small will be 21% higher in the scenario than in the Current Path by 2043.
XSM-Export multiplier – Services	Interpolate to 1.15	Services export in Mali will increase by 73.2% between 2024 and 2033, and by 2043 services export share will reach 9.7% of GDP.
XSM-Export multiplier – ICT	Interpolate to 1.2	Coming from a low base, the ICT export share will improve by 127% between 2024 and 2033, reaching 0.12% by 2043.
XSM-Export multiplier – Materials	Interpolate to 1.15	Coming from a low base, the export share of material will improve by 146% between 2024 and 2033, reaching 0.8% by 2043.
Increase multifactor productivity (mf padd)	Interpolate from 0 in 2023 to 0.008 in 2033, maintain	Free trade unleashes productivity growth. Calculations or adjustments were based on annual average growth rates for the period 2010 to 2018 using the Penn World Tables data - TFP at current PPPs (USA = 1).
XSM-Export multiplier – Energy	No intervention	The Current Path forecast is already aggressive.
Import tariff tax multiplier by country and sector- Mtariff tax rm (agriculture)	Interpolate from 1 in 2029 to 0.1 in 2042 (13 years)	Lower import tariffs promote free trade between countries and boost growth and development. In the AfCFTA, agriculture products are considered sensitive products and have a fixed 10% tariff. Current tariffs can be maintained during the first

		five years with phase-down starting in year six.
Import tariff tax multiplier by country and sector – Mtariff _{taxrm} (manufacturing)	LDC: Interpolate from 1 in 2023 to 0.05 in 2033	Lower import tariffs promote free trade between countries and boost growth and development. A number of manufactured products are excluded from the non-sensitive list, e.g. most goods and passenger vehicles; thus, a 95% tariff reduction.
Import tariff tax multiplier by country and sector – Mtariff _{taxrm} (energy)	Interpolate from 1 in 2023 to 0 in 2033	Lower import tariffs promote free trade between countries and boost growth and development. Energy goods are all classified under non-sensitive products, and they have a 100% tariff reduction.
Import tariff tax multiplier by country and sector – Mtariff _{taxrm} (service)	Interpolate from 1 in 2023 to 0 in 2033	Lower import tariffs promote free trade between countries and boost growth and development. Services are all classified under non-sensitive products, and they have a 100% tariff reduction.
Import tariff tax multiplier by country and sector – Mtariff _{taxrm} (ICT)	Interpolate from 1 in 2023 to 0 in 2033	Lower import tariffs promote free trade between countries and boost growth and development. ICT goods are all classified under non-sensitive products, and they have a 100% tariff reduction.
Import tariff tax multiplier by country and sector – Mtariff _{taxrm} (materials)	LDC: Interpolate from 1 in 2023 to 0.01 in 2033 (10 years)	Lower import tariffs promote free trade between countries and boost growth and development. Non-sensitive products have a 100% tariff reduction under the AfCFTA. A few material products are included in the 3% of the excluded products, e.g. corrugated flat-rolled steel; thus, the 99% reduction in material tariffs.
Financial Flows scenario		
Worker remittances multiplier	Interpolate to 1.15	On average, low-income African

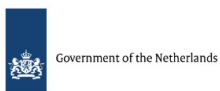
(xworkremitinm)		<p>countries like Mali receive more remittances than lower-middle-income countries. Uganda increased its remittance share of GDP by 234% between 2009 and 2019. This intervention increases the remittance share of GDP is projected to increase by 6.8% between 2024 and 2033. By 2043, total remittances in Mali will constitute about 4% of GDP instead of 3.1% in the Current Path forecast. Although this is far above the average for low-income countries, it is below the rates in The Gambia and Uganda.</p>
Aid (foreign) receipts multiplier (aidrecm)	Interpolate to 1.2	<p>On average, low-income countries in Africa like Mali receive more aid than lower-middle-income countries as they rely more on aid. Liberia increased its aid share of GDP from 8.7% in 2000 to 97% in 2007. Between 2024 and 2033, the projected share of aid receipts in GDP for Rwanda is poised to decrease by 3.4% compared to the 20.2% in the Current Path. By 2043, aid to GDP in Mali will constitute 7.2% of GDP above the Current Path although below rates in countries such as the Central African Republic and Liberia.</p>
FDI, stocks of investment from abroad, multiplier (xfdistockm)	Interpolate to 1.1	<p>Foreign direct investment (FDI) is an enabler of growth. FDI stock in Mali is currently ranked 10th among the 23 low-income countries in Africa. Togo improved its FDI receipt by 132% between 2010 and 2020. In the intervention, FDI stock will increase to 17.2% between 2024 and 2033. By 2043, the stock of FDI in Mali will constitute 49.4% of GDP.</p>
FDI, stocks of outward investment, multiplier (xfdistoutm)	Interpolate to 0.8	<p>As a proxy for capital flight, reducing the outflow of FDI is paramount to building the domestic capital stock of Mali.</p>

Portfolio investment, stocks of investment from abroad, multiplier (xportfoliom)

Interpolate to 1.2

Investment in financial assets in Mali promotes the financial market development and its long-term growth.

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