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Stagnation or Growth? Algeria's development pathway to 2040

Annex

Jakkie Cilliers and Stellah Kwasi

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Annex

For this report, we used a Project Data file to replace certain data in IFs with either more recent data or data from an alternative source, e.g. the National Statistics Office.

Chart A1: Project data file

Series	Alternative source/reasoning
EdSecLowerEnrollGross%Female EdSecLowerEnrollGross%Male EdSecLowerEnrollGross%Total EdSecUpperEnrollGross%Female EdSecUpperEnrollGross%Male EdSecUpperEnrollGross%Total	Updated with new data 2015–2019 from the National Statistics Office (NSO) on count of enrolled learners. Calculated by dividing count of learners from Algeria national source and total age-appropriate children from UNESCO
Corruption	Added 2019 from Transparency International
FreedomEcon	Added 2016 and 2017 from Fraser Institute
GovtDebt%GDP	IMF Regional Outlook 2019 Statistical Appendix (2018 data)
IncBelow1D90c%WDI PovertyGap$1c90perDay	Updated historical data from WDI latest data update (1988–2011)
IncBelow3D10c%WDI	Updated using output from Povcalnet (2011)
LandCrop LandIRArea	Data from workshop participant (2014–2015)
RoadPavedKm RoadsTotalNetwork	Updated historical data for 2011 and 2015. Then added new east–west highway that was completed in 2015

Chart A2: Current Path adjustments

Series	Adjustment in IFs	Reasoning/justification
gdprext, GDP growth rate, exogenous target (%) and gdpadjsw set to 0 to turn on exogenous specification for GDP growth rate.	Set to 3.2 in 2016, 1.3 in 2017, 1.4 in 2018, 0.7 in 2019, -6.4 in 2020 and 1.9 in 2021 before returning to -100 (which reverts to the IFs forecast) in 2022	Updated historical growth data from IMF. World Bank growth forecast for 2020 and 2021 that assumes that the pandemic fades in the second half of 2020 and containment efforts can be eased.

Annex B: Scenarios

Chart B1: All interventions start in 2021 and last to 2026 unless otherwise specified.

Parameter	Definition	Adjustment in IFs	Magnitude of change	Reasoning/motivation/j
Transform the Economy				
Econfreem (economic freedom multiplier)	Improve economic freedom	Interpolate to 1.2 by 2026 and hold to 2040	4.801 in 2021 to 5.772 in 2026 and 5.721 by 2040	Improves freedom on the Fraser Index by 20% between 2021 and 2026. Zambia improved economic freedom by 53.5% between 1990 and 1995.
Govregbusindm (business regulation index multiplier)	Improve business regulation index	Interpolate to 0.8 by 2026 and hold to 2040	5.419 in 2021 to 4.323 by 2026 and 4.256 by 2040	Improves business regulation by roughly 20% between 2021 and 2026. Benchmarked to aspire to the UMICs' average.[1]
Invm (investment in the economy multiplier)	Improve investment	Interpolate to 1.2 by 2026 and hold to 2040	39.8% of GDP in 2021 to 40.2% by 2026 and 42.5% by 2040	Improves investments by 2.6% of GDP between

				2021 and 2040. Investments relative to GDP in Algeria are lower than in a country like Zambia.
Firmtaxrm (firm tax rate multiplier)	Reduce firm tax	Interpolate to 0.85 by 2026 and hold to 2040	US$4.052 bn in 2021 to US$4.021 bn in 2026 and US$5.724 bn by 2040	Algeria has a higher corporate tax rate than Egypt and Tunisia. Reducing taxes could attract FDI.
Xfdifinm (foreign direct investment, flows from abroad, multiplier)	Improve FDI inflow	Interpolate to 1.2 from 2026 to 2031 and hold to 2040	1.286% of GDP in 2021 to 1.443% in 2026 and 1.656% in 2040	FDI inflows into Algeria have declined since 2011. Improves FDI inflows as a percent of GDP by 0.157 percentage points between 2021 and 2026. Angola improved FDI inflows by over 36 percentage points between 1994 (3.5%) and 1999 (40.2%).
Xfdioutm (foreign direct investment, outflows, multiplier)	Reduce FDI outflow	Interpolate to 0.9 by 2026 and hold to 2040		Augments improvement in FDI inflows to allow existing businesses to stay and encourages domestic investment.
Protecm (protectionism in trade, multiplier on import prices (manufactures)	Reduces imports	Interpolate to 1.2 by 2026 and hold to 2040	17.55% of GDP in 2021 to 13.67% in 2026 and 17.94% in 2040	Encourages manufacturing and protects emerging industries by regulating certain imports. Reduces spending on imports by over 22% between 2021 and 2026. Algeria reduced spending on imports by nearly 37%

				between 1982 (29% of GDP) and 1987 (18.4%).
Labparm (labour participation rate multiplier, female)	Increases female labour participation rate	Interpolate to 1.5 by 2026 and hold to 2040	20.7% in 2021 to 31.2% in 2026 and 37.3% by 2040	Improves female labour participation rate by nearly 50% between 2021 and 2026. Algeria's female labour participation rate improved by 133% between 1983 (18%) and 1987 (42.1%).
Improved Governance and Subsidy Reform				
Govcorruptm (government corruption multiplier)	Reduce government corruption	Interpolate to 1.2 by 2026 and hold to 2040	3.107 in 2021 to 3.637 in 2026 and 3.937 by 2040	Reduces corruption by nearly 21% between 2021 and 2026. Nigeria improved its corruption perception index by 58.3% between 2000 and 2005. It has sustained improvements for over 6 years (comparison from old CPI).
Goveffectm (governance effectiveness multiplier)	Improve government effectiveness	Interpolate to 1.2 by 2026 and hold to 2040	2.024 in 2021 to 2.463 in 2026 and 2.525 by 2040	This intervention improves government effectiveness by about 22% between 2021 and 2026. Georgia improved government effectiveness by 53% between 2007 and 2002.
Democm (Democracy level multiplier)	Improve the level of democracy	Interpolate to 1.2 by 2026 and hold to	2.749 in 2021 to 5.328 in 2026 and	Democracy (Polity IV index) score

		2040	4.884 by 2040	improves by nearly 94% between 2021 and 2026. Nicaragua improved its Polity index and transitioned into a democracy from -1 to 6 between 1989 to 1994.
Govhhtrnwelm-skilled (government to skilled household welfare transfers)	Reduce the rate of transfers to skilled (middle and upper class)	Interpolate to 0.5 by 2030 and hold to 2040.	14.55% of GDP in 2021 to 14.02% in 2026, 13.5% in 2031 and 14.17% by 2040	Among lower middle-income countries in Africa, Algeria currently has the highest portion of GDP (16%) allocated to household transfers. The country also has very high government subsidies (e.g. in fuel and foodstuffs) that mostly accrue to the middle- and upper-class segment of the population. Reduces welfare transfers by 7% between 2021 and 2026. Egypt cut fuel subsidies by 40.5% and electricity subsidies by 75% in the 2019/2020 financial year.
Agriculture, Water and Renewables				
Ylm (Agricultural yields multiplier)	Improves yields	Interpolate to 1.2 by 2031 and hold to 2040	2.992 tons in 2021 to 3.756 in 2031 and 4.275 by 2040	Increases yields by 25.5% between 2021 and 2031. Algeria improved yields by over 100% between 2008 (1.42) and 2013 (2.86).

Idcropm (crop land multiplier)	Increase crop land area	Interpolate to 3 by 2031 and hold to 2040	From 8.511 million ha in 2021 to 9.083 million ha in 2031 and 9.416 by 2040	According to the National Union of Algerian Famers, arable land could be expanded to 30 million ha of land. [2]
Landirareaequipm (multiplier on land area equipped for irrigation)	Increase land area equipped for irrigation	Interpolate to 3 by 2031 and hold to 2040	1 245 ha in 2021 to 1 279 ha in 2031 and 1 286 ha by 2040	Increases hectares under irrigation by nearly 2.7% between 2021 and 2031. Algeria's target was to increase irrigation to 2 million ha by the end of 2019.[3]
Aglosstransm (loss rate of agriculture as moves from producer to consumer multiplier)	Reduce agricultural losses from producer to consumer	Interpolate to 0.8 by 2026 and hold to 2040	5.647mt in 2021 to 4.854 in 2026 to 5.481 mt by 2040	Reduces waste from production to consumption by 14% between 2021 and 2026.
Aglossconsm (waste rate of agricultural consumption multiplier)	Reduce food waste at consumption level	Interpolate to 0.8 by 2026 and hold to 2040	3.558% of demand in 2021 to 3.546% in 2026 and 3.539% by 2040	Reduces consumption loss by 0.34% between 2021 and 2026.
Wastewatertreatedm (Treated wastewater multiplier-cubic km)	Increase the rate of wastewater treated	Interpolate to 1.2 by 2026 and hold to 2040	0.367 ckm to 0.526 in 2026 and by 0.82 by 2040	Increases wastewater treated by nearly 43% between 2021 and 2026.
Wastewatportreatreusedm (portion of wastewater treated reused multiplier)	Increase the rate of wastewater treated reused	Interpolate to 1.2 by 2026 and hold to 2040	0.11 ckm to 0.151 in 2026 and by 0.23 by 2040	Increases wastewater treated and reused by nearly 37% between 2021 and 2026.
Qem-Q (Capital costs-to-output ratio) in energy multiplier (OthRenew)	Reduce capital cost of renewable energy	Interpolate to 0.8 by 2026 and hold to 2040	0.226% of total energy production in 2021 to 0.3% in 2026 and 0.352% by 2040	Because of high subsidies in energy and electricity prices, the cost of investing

				in renewables is still high in Algeria. Increases renewable energy production by 32% between 2021 and 2026.
Enivm (Energy investment by type (OtherRenew multiplier)	Increase investment in other renewable energy sources	Interpolate to 1.2 by 2026 and hold to 2040	0.226% of total energy production in 2021 to 0.254% in 2026 and 0.355% by 2040	Augments shift and production of renewable other energy. Improves production by 12% between 2021 and 2026.
Knowledge and Technology				
Ictbroadm (ICT broadband multiplier)	Improve broadband rate	Interpolate to 1.2 by 2026 and hold to 2040	5.9 million people in 2021 to 11.2 in 2026 and 24.4 by 2040	Outcome: increased access to fixed broadband. Algeria already has a relatively good ICT infrastructure. Creating greater access to the Internet will help to scale up to a digital economy. Improves number of people with access to fixed broadband by 89% between 2021 and 2026. India increased fixed broadband per 100 subscriptions by over 700% between 2005 and 2010.
Ictintnetbwpum (Multiplier on Internet bandwidth per user)	Improve Internet bandwidth rate per user	Interpolate to 1.2 by 2026 and hold to 2040	No specific series for this intervention	
Ictcybbenefitm (ICT cyber benefit multiplier)	Improve the benefit of ICT	Interpolate to 1.2 by 2026 and hold to 2040		
Edqualpriallm (primary education quality, multiplier)	Improve the quality of primary education	Interpolate to 1.1 by 2031 and hold to 2040	40.39 in 2026 to 43.42 in 2031 and 45.92 by 2040	Improves the quality of primary education by 16% between 2021 and 2031. The quality of education

				in Singapore and Japan has scored above the OECD (PISA)[4] average since 2015.
Edqualsecallm (secondary education quality, multiplier)	Improve the quality of secondary education	Interpolate to 1.1 by 2031 and hold to 2040	47.66 in 2026 to 50.88 in 2031 and 53.08 by 2040	Improves the quality of secondary education by 14% between 2021 and 2031. Singapore scored higher in quality of education than all the OECD-PISA participating countries in 2018.
Edseclowrgram (lower secondary graduation rate multiplier)	Improve lower secondary graduation rate	Interpolate to 1.1 by 2031 and hold to 2040	97.09% in 2026 to 101.9% in 2031 and 103.6% by 2040	Increases lower secondary graduation by roughly 9 percentage points between 2021 and 2031.
Edsecupprtranm (upper secondary transition rate multiplier)	Improve transition rate to upper secondary	Interpolate to 1.1 by 2031 and hold to 2040	87.34% in 2026 to 93.27% in 2031 and 96.13% by 2040	Increases upper secondary transition 11.5 percentage points between 2021 and 2031. Ghana increased upper secondary transition by 49 percentage points between 2006 and 2011.
Edsecupprgram (upper secondary graduation rate multiplier)	Improve upper secondary graduation rate	Interpolate to 1.1 by 2031 and hold to 2040	82.66% in 2026 to 88.36% in 2031 and 91.68% by 2040	Increases upper secondary graduation by 11.3 percentage points between 2021 and 2031. Sri Lanka increased secondary

				graduation by over 20 percentage points between 1990 and 2000.
Edsecupprvocadd (upper secondary vocational share additive factor)	Improve upper secondary vocational training	Interpolate to 4 by 2031 and hold to 2040	11.82 in 2026 to 13.82 in 2031 and 13.83 by 2040	Improves upper secondary vocational training by nearly 4 percentage points between 2021 and 2031. Algeria tripled vocational enrolment between 1981 and 1987.[5]
Edsterintm (tertiary intake rate multiplier)	Improve tertiary intake rate	Interpolate to 1.1 by 2031 and hold to 2040	36.21% in 2026 to 35.68% to 36.88% in 2031 and 42.48% by 2040	Improves tertiary enrolment by 2.2 percentage points between 2021 and 2031. Ukraine increased tertiary enrolment by 28 percentage points between 1995 and 2005.

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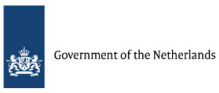

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About the authors

Dr Jakkie Cilliers is the ISS's founder and former executive director of the ISS. He currently serves as chair of the ISS Board of Trustees and head of the African Futures and Innovation (AFI) programme at the Pretoria oce of the ISS. His 2017 best-seller Fate of the Nation addresses South Africa's futures from political, economic and social perspectives. His three most recent books, Africa First! Igniting a Growth Revolution (March 2020), The Future of Africa: Challenges and Opportunities (April 2021), and Africa Tomorrow: Pathways to Prosperity (June 2022) take a rigorous look at the continent as a whole.

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