Education
The Education scenario

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The considerations relating to the quantity and quality of education mean that it is highly unlikely that Africa will meet the education targets of SDG 4, with Target 4.1 aimed at all children having access to 'free, equitable and quality primary and secondary education', as measured by a minimum proficiency in mathematics and reading. Accordingly, this section sets out the interventions in the IFs modelling platform that represent ambitious but reasonable improvements in the quantity, quality and nature of education in Africa. We then compare the impact of the scenario with education outcomes on the Current Path, including on growth rates, size of economies, average incomes and inequality.

Our approach is systematic and comprehensive. The interventions target every level of the formal education flow, from primary education enrolment to tertiary graduation. Some aspects—such as with regard to ECD, adult education and informal education—are, however, not not yet included in the IFs forecasting platform. Informal education in particular remains hard to measure and compare across African countries. These elements all deserve further investigation.

Chart 11 presents a simple schematic for flows and stocks within the education system. We use the standard UNESCO categorisation of primary, lower and upper secondary, and tertiary levels.

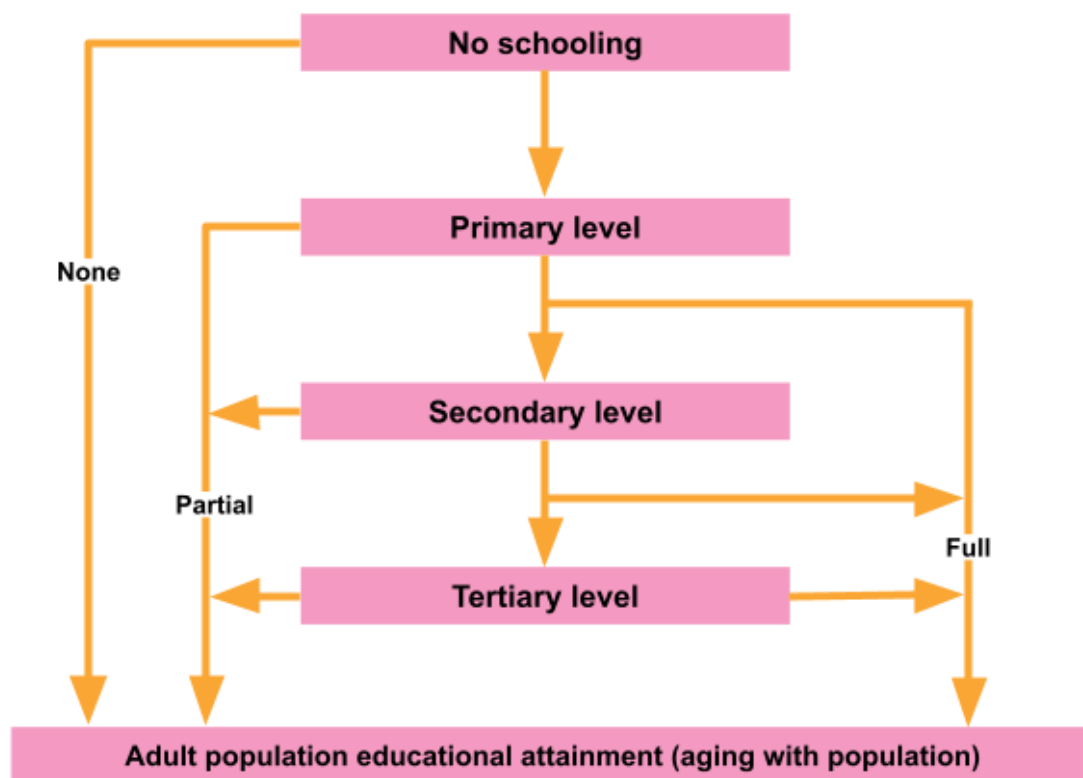**Chart 11: Education flows and stocks**

Chart 12 indicates the logic of the interventions across 11 sets of variables, which target intake, survival and graduation rates, as well as quality from primary to tertiary level. We also target gender parity, particularly at the primary and secondary level, and the proportion of students enrolled in key skill programmes, including vocational studies and courses focused on STEM at higher levels.

Chart 12: The Education scenario

Logic	Intervention	Outcome	Impact
Appropriate education to development requirements	Improvement in primary net intake and survival rate	Improved primary school educational outcomes	Improvement in human capital contribution to growth
	Improvement in test scores for primary students (quality)		
	Increased lower and upper secondary transition rate	Improved secondary school educational outcomes	
	Improvement in lower and upper secondary graduation rate		
	Improvement in test scores for secondary students (quality)		
	Increased lower and upper secondary, vocational share	Education more relevant to the modern economy	
	Increased share of science and engineering graduates' rate		
	Improvement in tertiary, intake or enrolment	Increased tertiary education outcomes	
	Increased tertiary graduation rate		
	Gender parity for primary, secondary and tertiary intake	Enhanced female labour participation rate	

Improving Primary Access

The first intervention is improving net primary intake to increase net enrolment at the primary school level. Although gross enrolment is high in most African countries, net enrolment remains low at 81.8% in 2019 compared to 89% in South Asia and 96% in South America. Nonetheless, some countries in Africa, particularly North Africa, have advanced in net enrolment with the region close to saturation levels. This intervention is done only for countries where the Current Path fails to reach 100% by 2043. As a result, net enrolment increases from 81.8% in 2019 to 96.3% in 2043 in the scenario, which is almost at the same level as South America and South Asia and 6% above the Current Path forecast in 2043.

The next intervention at the primary level is an improvement in survival rate. The dropout rate in Africa is very high even at the primary level. In 2019, Africa's primary school survival rate was 68.3%, compared to 85% in South Asia and 90.3% in South America. This intervention pushes the primary school survival rate to 90.2% instead of 82.5% on the Current Path, thereby closing the gap between Africa and South Asia. The impact is such that rates for gross primary school completion in Africa improve from 76% at primary level in 2019 to 110% by 2043, instead of only 90% on the Current Path. This is an aggressive intervention but without a huge effort to improve this foundational aspect of Africa's development, subsequent progress on most other dimensions is virtually impossible. In the process, Africa overtakes South Asia in primary school completion rates by 2029 and catches up to South America's rate by 2030.

Improving secondary access

At the lower secondary level, we improve the transition rates from primary to lower secondary, which addresses the high dropout rates in these levels. The intervention improves transition rates from primary to lower secondary from 86.6% in 2019 to 98.7% in 2043, on par with South America and South Asia, instead of 94% on the Current Path. Another intervention at the lower secondary level is an improvement in lower graduation rates to increase the proportion of students who complete the last level of lower secondary. The intervention raises the lower secondary completion rate from 49.6% in 2019 to 74% in 2043 in the scenario compared to 63% in the Current Path forecast.

The same set of interventions are repeated at the upper secondary levels (i.e. improvement in upper secondary transition and graduation rates). As a result, the transition rate from lower to upper secondary in the scenario increases from 83.6% in 2019 to 94.7% by 2043, slightly below South Asia and South America, compared to 87.2% in the Current Path forecast. Likewise, upper secondary completion rates rise from 31.9% in 2019 to 54.8% in the scenario as opposed to 46.1% in the Current Path forecast. Although the intervention improves completion rates in the scenario, they will still lag behind South Asia and South America by 2043.

Improving tertiary access

With respect to tertiary education, our interventions are less aggressive as improvements in tertiary education output will rely decisively on gains at lower levels first. The interventions consist of an improvement in net enrolment as well as improvement in tertiary graduation. In this scenario, tertiary enrolment improves from 14% in 2019 to 39.4% in 2043, compared to the forecast of 23.4% on the Current Path. This reduces the gap in tertiary enrolment with South Asia at 44.5% and South America at 58.3% quicker than the Current Path. Similarly, the tertiary graduation rate rises from a low base of 8% in 2019 to almost 18% in 2043—3.3 percentage points higher than the Current Path forecast. Africa will continue to lag behind South Asia's and South America's rates of over 30% graduation rate in 2043, however, demonstrating the size of the gap and the long time frames required to improve the education system.

Education relevant to modern economy

To improve the supply of relevant skills for future demand, we improve the lower and upper secondary vocational share and the share of science and engineering graduates. Consequently, the percentage of lower secondary students enrolling for vocational training in 2043 is 5.6% instead of 1.6%. The percentage of upper secondary school students pursuing vocational studies is boosted from the 2043 Current Path forecast of 17.8% to 22.8%. In viewing these numbers, it is important to bear in mind that these percentages are accompanied by very rapid population growth rates. The share of science and engineering graduates at the tertiary level increases from 14.6% in 2019 to 24% by 2043.

Improving gender parity

The Education scenario creates a more aggressive gradient and pushes gender parity rates closer to the 1:1 female-to-male ratio goal on almost every indicator. In the Education scenario, gender parity in net primary enrolment is achieved as early as 2028 and maintained until 2043. Although gender parity in net secondary enrolment occurs much later by 2035 in the Education scenario, it is a significant improvement over the Current Path given that gender parity is not possible in the latter even by 2043. Gender parity at the tertiary level is likely to follow the general global trend of reaching a 1:1 ratio and then surpassing it (as female students often tend to be higher achievers at tertiary education levels) both in the Current Path forecast and in the Education scenario.

Improving the quality of education and skills

This set of interventions improves the quality of education at primary and secondary levels.

At the primary level, Africa does not currently lag far behind South Asia, although composite test scores (including for maths, reading and science) are lower. However, while South Asia's education scores are likely to rise by about five percentage points (a 14% improvement), Africa is set to stagnate on the Current Path, seeing an improvement of only two percentage points (or 7%) by 2043 compared to scores in 2019.

In the Education scenario, our interventions instead point to Africa achieving slightly higher levels of quality than South Asia by 2043 (about a 26.7% improvement from 2019 value), although both regions will still fall slightly behind South America's scores. The trend is similar at the secondary level, with the interventions boosting quality across maths, reading and science to keep up with progress in South Asia and South America. By 2043, Africa's test score of 45.5 at the secondary

level will marginally surpass the score of 45.2 in South Asia while catching up with the quality levels in South America at 46.5.

Meeting SDG targets

The interventions in the Education scenario would also be good news for Africa's SDG ambitions. In the Education scenario, Africa will get significantly closer to attaining SDG 4.1 of achieving equitable and quality universal primary and secondary education.

The scenario raises primary net enrolment from 82% of-age children in 2019 to 92% by 2030, and the primary gross completion rate from 73% to 100% in the same period. Also, the Education scenario also improves gross lower secondary enrolment from 59% in 2019 to 92% in 2030 and gross upper secondary enrolment to 66% from 43% in 2019. Similar improvements can be seen across the other indicators although, like on the Current Path, Africa will only meet its enrolment and completion goals by 2030 if this aggressive scenario were to be fully realised.

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Mr Enoch Randy Aikins joined the AFI in May 2021 as a Researcher. Before that, Enoch was a research and programmes officer at the Institute for Democratic Governance in Accra in charge of local governance reforms, poverty and inequality and public sector reforms. He also worked as a research assistant (economic division) with the Institute for Statistical Social and Economic Research at the University of Ghana. Enoch's interests include African politics and governance, economic development, public sector reform, poverty and inequality. Enoch is a Young African Fellow at the School of Transnational Governance, European University Institute in Florence and has an MPhil in economics from the University of Ghana, Legon.

Dr Jakkie Cilliers is the ISS's founder and former executive director. He currently serves as chair of the ISS Board of Trustees, head of the African Futures and Innovation (AFI) programme at the Pretoria oce of the Institute, and is an extraodinary professor at the University of Pretoria. 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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