WORLD BANK GROUP

WESTERN AND CENTRAL AFRICA EDUCATION STRATEGY

SCHOOL INFRASTRUCTURE IN THE AFW REGION

BACKGROUND NOTE

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BACKGROUND PAPER ON SCHOOL INFRASTRUCTURE IN THE AFW REGION

BACKGROUND PAPER FOR THE
WEST AND CENTRAL AFRICA EDUCATION STRATEGY

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Abbreviations

AFW	Western and Central African Region
ANICT	National Investment Agency of Territorial Authorities
APL	Adaptable Program Lending
ASA	Advisory Services and Analytics
BESP	Basic Education Support Project
BESSIP	Basic Education Subsector Investment Program
CDD	Community-Driven Development
CGS	School Management Committees
CMA	Contract Management Agency
DCE	MoE construction directorate
DPF	Development Policy Financing
EEFA	Emergency Education for All
EFA	Education For All
EMIS	Education management information system
ESA	Eastern and Southern Africa
ESIP	Education Support Investment Project
ESSP	Education Sector Strategic Plan
FTIP	Fast Track Initiative Project
GER	Gross enrollment ratio
GPE	Global Partnership for Education
HCI	Human Capital Index
ICR	Implementation Completion Report
IDA	International Development Association
IEG	Independent Evaluation Group
IPF	Investment Project Financing
JSDF	Japan Social Development Fund
JSS	Junior Secondary School
LCB	Local Competitive Bidding
LCDD	Local and community driven development
LG	Local Governments
NLDP	National Local Development Program
MoE	Ministry of Education
OED	Operations Evaluation Department
OOS	Out-of-school
PAUET	External Evaluation Report of the EFA Emergency Support *Project*
PCR	Per classroom ratios
PDAE	Paris Declaration on Aid Effectiveness
PDEF	Programme National de l'Éducation et de la Formation
PforR	Program-for-Results
PIU	Project Implemented Unit
PNDCC	Projet National de Développement Conduit par les Communautés
PSDCC	Projet de Services Décentralisés Conduits par les Communautés
PSEF	Education and Training Sector Program
RDA	Regional Development Agency
SDFP	Sustainable Development Financing Policy

SPJ	Social Protection & Jobs
SQEP	Science Quality Education Project
SSA	Sub-Saharan Africa
SVGCDP	Support to Vulnerable Groups Community Development Project
SWAP	Sector-Wide Approach
UIS	UNESCO Institute for Statistics
VfM	Value for Money
WBR	World Bank Report
WDI	World Development Indicators

1. Introduction and Regional Context

The West and Central Africa (AFW) region lags significantly behind other regions in ensuring access to quality education opportunities for school-age children. The AFW region comprises of 22 diverse countries with a population of half a billion people with most countries classified as low-income or lower-middle-income economies. AFW countries score very low on the Human Capital Index (HCI) with the index value of less than 0.5 for all countries in the region and most of the countries in the region fall in the bottom quartile of the HCI distribution (World Bank 2021a). The region also has one of the highest number of out-of-school (OOS) children in the world, with an estimated 41 million children of primary and secondary school-age out of school (UNICEF 2019).

Countries in the AFW region still face significant challenges in achieving effective coverage of education services. Rapid growth in the population of school-age children for countries in the AFW region means that even as countries have been able to absorb a growing number of school-age children into the formal education system in recent years, a large number of children are still out of school. Despite making some progress over the recent years, the state of the basic school infrastructure remains inadequate to accommodate all school-age children, and a large share of the existing school infrastructure is unsafe and unsuitable for creating a conducive learning environment. Inadequate infrastructure to properly accommodate even children currently attending school and increasing demand for formal education calls for significant investment in expanding access to education for all children.

2. Rational for the policy note/background paper

Many children in the region are schooling-deprived because there are no schools or schools are too far from where they live; and many children are learning-deprived as they attend schools with infrastructure not conducive for learning. Investment in school infrastructure is a critical first step in ensuring quality education for all children. Equally important for achieving positive academic outcomes for students is the provision of learning spaces that are healthy and safe (Barrett et al., 2019). While the provision of adequate school infrastructure is not a sufficient condition for ensuring quality education for all children, it is a necessary condition for ensuring access to quality learning environment for all children. Therefore, without investment in providing access to safe and adequate learning environment, benefits of investment in other factors aimed at improving quality of education such as building a capable and motivated teaching force may not be fully materialized. Building schools not only helps improve school enrollment and educational outcomes in the short- to medium-run, but it also has positive impacts on employment prospects and wages in the long-run (Duflo 2001; Akresh, Halim, and Kleemans 2021).

Understanding the scale of shortage of school infrastructure is critical for making policies and investment decisions. Identifying shortfalls in the provision of school infrastructure and finding promising approaches to addressing them helps in prioritizing scare resources so that there is a match between the supply of school infrastructure and the demand for schooling. Critical assessment of infrastructure needs helps rethink the scale of financing needs for school infrastructure, review norms and standards, and also to prioritize allocation of available resources to the neediest areas in an equitable and efficient manner. Policy decisions on education financing is indeed, dependent on the needs assessment for construction

of new school infrastructure as well as renovation of existing structures to make them conducive for learning and safe.

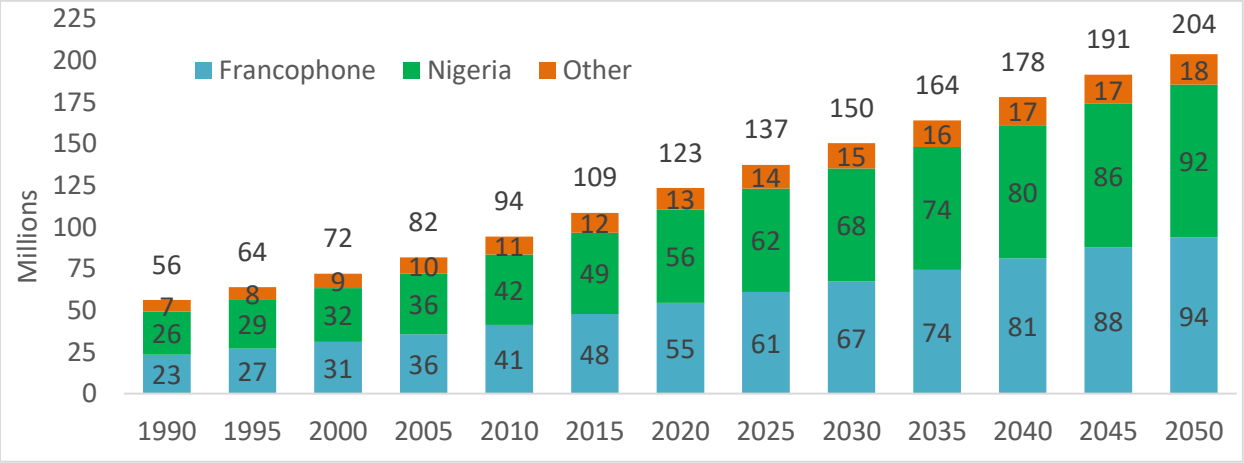
This paper brings together key findings from international and regional studies on access to education and importance of school infrastructure, as well as factual experience of provision of such infrastructure. The following sections draw from global education database, recent household surveys, and multiple recent reports on school infrastructure and access to schooling.

3. Diagnostics on School Infrastructure Need and Supply: Challenges and Opportunities

Demographic Challenges

AFW is one of the fastest growing regions in the world in terms of population growth. AFW's population has multiplied four-fold in the last 50 years. High fertility rates leading to high growth in population of school-age children means that the demand for schooling in this region will continue to grow for several decades. Countries in the AFW region will have to make significant investment in school infrastructure to meet the demand for education from an increasing number of school-age children. School age population of the AFW region is projected to reach 150 million by 2030 and 204 million by 2050 (Figure 1). The school-age (basic education) population is currently 123 million in the AFW region. Nigeria makes for about 45 percent of this population; Francophone countries collectively make for 44 percent and other Anglophone and Lusophone countries make for the remaining 10 percent of the school age population in the region. Given that most of the countries in the region do not have adequate school infrastructure to accommodate all current school-age children, going forward, countries in the AFW region will have to make significant investment in school infrastructure to be able to absorb increasing number of school-age children into formal education system.

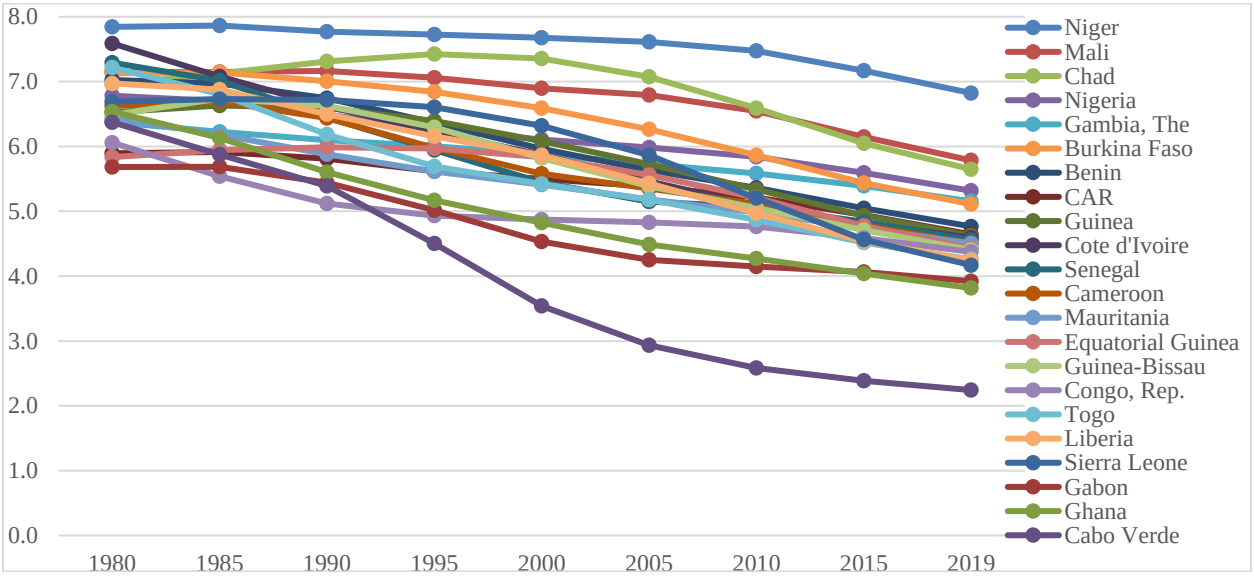
Figure 1. Estimated and projected growth in basic school-age population in AFW region



Source: Based World Population Prospects 2019. United Nations (2019).

For the medium-term, number of school-age children will continue to increase at a high rate in most countries in the AFW region as the region is still at a very early stage of the demographic transition. The region has the youngest population in the world with 12 percent of the region's population being under the age of 15 (World Bank 2021b). Currently, most of the AFW countries are in the pre-demographic transition phase. 6 out of 22 countries in the AFW region have fertility rate of 5 or higher births per women with Niger having the highest fertility rate at 6.8. 13 countries have fertility rate between 4 and 5 births per women. Only three countries in the region—Cabo Verde (2.2), Ghana (3.8) and Gabon (3.9)—have total fertility rate of less than 4 birth per women (Figure 2). Moreover, stagnant or slow pace of decline in fertility rates in many countries in the AFW region means that the region may take more than 60 years to fully complete the fertility transition (May and Guengant 2020). With the continuation of the fertility transition period for the next few decades, the high growth of school-age population will continue to be a challenge as countries seek to build new school classrooms and facilities to facilitate absorption of an ever growing number of school-age children into the formal school system.

Figure 2. Trend in fertility rate in AFW countries



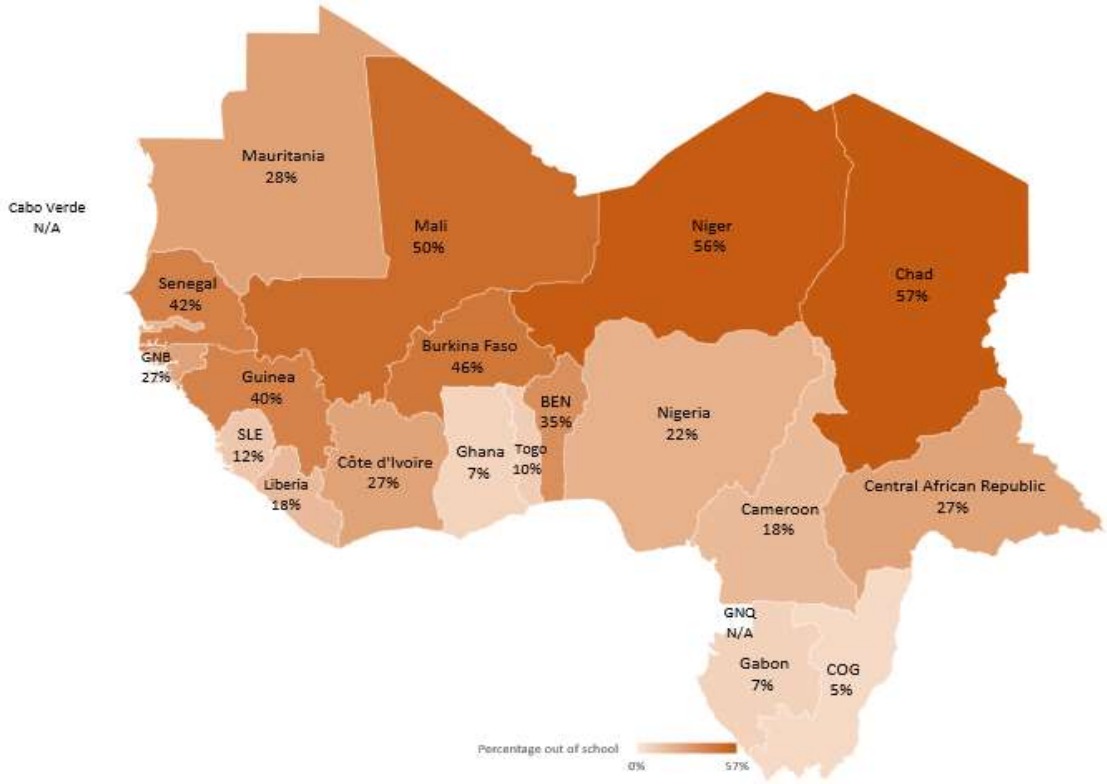
Source: Based on WDI database

Challenge of Inadequate Supply of School Infrastructure to Meet Demand for Schooling

Almost 1 in 3 children in the AFW region is out of school and lack of access to a nearby school is a significant constraint for access to school for many children. Estimates show that of the 123 million children of ages 6 to 15 years in the AFW region, about 38.2 million (31 percent) were out of school in 2020. In Chad (57 percent), Niger (56 percent), and Mali (50 percent), over 1 in 2 children of ages 6 to 15 years do not attend school (Figure 3). Similarly, Nigeria which has the highest number of OOS children in the region, more than 1 in 5 children of ages 6 to 15 years are out of school. Nigeria (12.0 million), Niger (4.08 million), Mali (2.96 million), Chad (2.70 million), Burkina Faso (2.64 million), Senegal (1.88 million), Côte d'Ivoire (1.86 million), Guinea (1.44 million), Cameroon (1.25 million), and Benin (1.12 million) all have over 1 million OOS children of ages 6 to 15 years (Figure 4). In all these countries OOS children make for significant proportion of children of this age group. Reasons to not be enrolled are diverse: although

the demand size of the problem is important, in most countries, the supply size is the dominant obstacle in pre-primary and primary, while it plays a lower role in lower secondary, albeit significant (Bashir et al 2018). In secondary, the lack of schooling is compounded by high age of cohorts combined with increasing opportunity costs.

Figure 3. Map of AFW countries showing rate of OOS children among 6 to 15 year olds

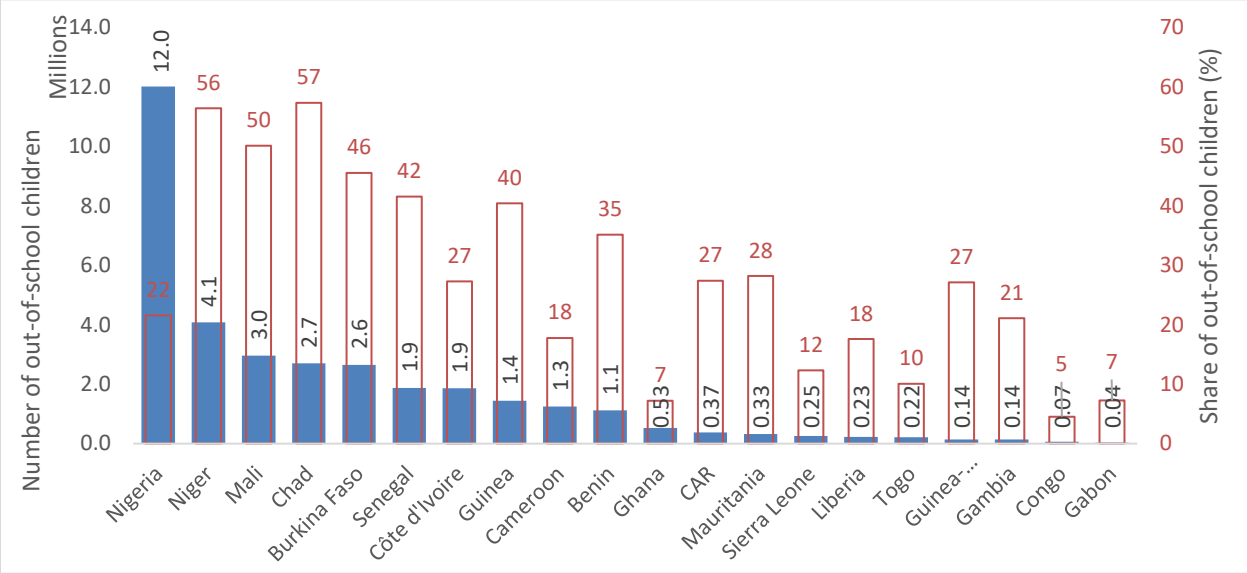


Sources: Estimates by authors' analysis of microdata from Demographic and Health Surveys (Benin 2018, Cameroon 2018, The Gambia 2020, Guinea 2018, Liberia 2019, Mali 2018, Senegal 2019, and Sierra Leone 2019); Living Standards Measurement Surveys (Burkina Faso 2014, Gabon 2017, Niger 2014, and Nigeria 2018); Multiple Indicators Cluster Surveys (Central African Republic 2019, Chad 2019, Congo 2015, Côte d'Ivoire 2016, Ghana 2017, Guinea Bissau2019, Mauritania 2015, and Togo 2017).

***The magnitude of the disconnect* between the continuous insufficient supply of school infrastructure by AFW governments and the high demand by population, particularly since the 2000s, is huge.** In fact, after governments committed in Dakar in 2000 to *Education For all* by 2015, in terms of school construction, the main response in AFW and other Sub-Saharan Africa (SSA) countries was not from governments, but from communities, particularly, in low-income countries where they massively built schools through self-help initiatives, compensating lack of public funds and thus contributing to the extraordinary enrollment success of the subsequent period across countries (primary net enrollment rate increased form 59 percent in 2000 to 76 percent 2015). However, it also translated into a dramatic increase of substandard facilities because these initiatives came from poor communities that, typically, built substandard classrooms using non-durable materials. In Togo for instance, during the period 2006-2012, while the total stock of primary classrooms increased by 30 percent, the proportion of schools built using non-durable materials increased from 30 percent to 47 percent (Republic of Togo 2014). In many AFW countries, communities built more schools than the Government, as it was the case in other low-income SSA countries. However, despite combined efforts from communities and governments in the

AFW region, almost 1 in 3 children of primary and lower secondary school age (6-15 years) are not in school in 2020. The absolute number of OOS children also increased from 32 to 39 million between 2010 and 2020 (UNICEF 2021).

Figure 4. Estimated rate and number of OOS children 6-15 years old in AFW countries



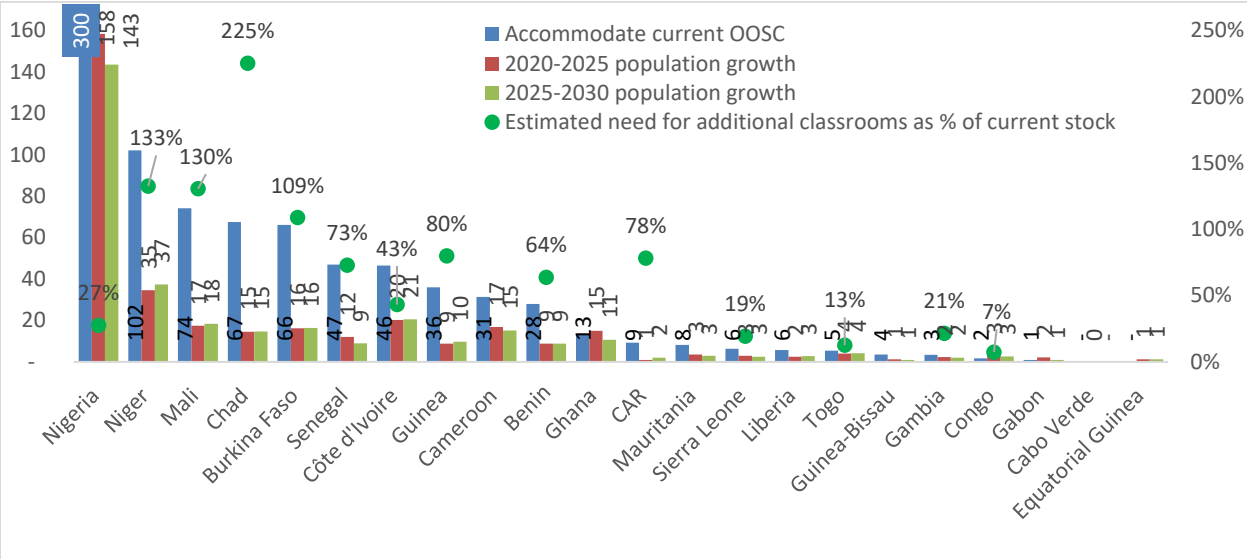
Sources: Estimates by authors based on population estimates for 2020 from United Nations (2019) and rate of out-of-school children based on analysis of microdata from Demographic and Health Surveys (Benin 2018, Cameroon 2018, The Gambia 2020, Guinea 2018, Liberia 2019, Mali 2018, Senegal 2019, and Sierra Leone 2019); Living Standards Measurement Surveys (Burkina Faso 2014, Gabon 2017, Niger 2014, and Nigeria 2018); Multiple Indicators Cluster Surveys (Central African Republic 2019, Chad 2019, Congo 2015, Côte d'Ivoire 2016, Ghana 2017, Guinea Bissau2019, Mauritania 2015, and Togo 2017).

Governments' efforts to address these challenges have been minimal and incomplete. To address the challenge of OOS children, many countries put together medium-term National Sector Plans in the 2010s, but the objectives of these plans were often low compared to needs for sake of realism, and their execution was partial—and often minimal—due to lack of funds. At the end of the process, the number of standard school facilities built in a given period by a government, even with donor support, is often like a drop in an ocean. For example, the 10-year PSEF program of Niger (2003-2013) calls for the construction of 6000 classrooms per year during the 10-year period (total 60,000 classrooms), while the GPE-funded SQEP project that support this Plan, which was then, albeit focusing on quality, the main funding source for school construction and financed 1,650 classrooms in 5 years (World Bank 2014a), i.e. 5.5 percent of the plan during the period.

It is estimated that the countries in the region will have to build about 1.5 million new classrooms by 2030 to accommodate current OOS children and cope with the school-age population increase. Given that the average pupil-classroom ratio for most of the countries in the region is 40 or above new classrooms will need to be built to facilitate any additional children entering the formal education system. It is estimated that the countries in the region will have to build 1.2 million new classrooms to maintain student-classroom-ratio of 40 and accommodate all OOS children and the children that are expected to be added between 2020 and 2025 as a result of growth in population of school age children. A further 325,000 classrooms will be needed by 2030 to accommodate all school-age children that are expected to

be added between 2020 and 2030. These estimates are lower bound for the number of classrooms that will be required to enroll all school-age children in school and maintain student-classroom-ratio of 40, as these estimates do not consider that fact the existing classrooms are already over-crowded and that students are not uniformly distributed across geographic locations. Nigeria alone will need to build at least 458,000 new classrooms by 2025 to accommodate all school-age children in schools and maintain student-classroom-ratio of 40 (Figure 5). It is estimated that by 2025 seven countries in the region will each have to add over 50,000 classrooms in order to accommodate all children in classrooms with 40 students or fewer. These countries include Niger (137,000 classrooms), Mali (91,000), Chad (85,000), Burkina Faso (82,000), Côte d'Ivoire (66,000), and Senegal (59,000).

Figure 5. Estimated number of classrooms required to accommodate current out-of-school children and estimated additional 6 to 15 years old as a result of population growth for the period 2020-2025 and 2025-2030.



Source: Estimates by authors based on population estimates for 2020 from United Nations (2019) and rate of out-of-school children based on analysis of microdata from Demographic and Health Surveys (Benin 2018, Cameroon 2018, The Gambia 2020, Guinea 2018, Liberia 2019, Mali 2018, Senegal 2019, and Sierra Leone 2019); Living Standards Measurement Surveys (Burkina Faso 2014, Gabon 2017, Niger 2014, and Nigeria 2018); Multiple Indicators Cluster Surveys (Central African Republic 2019, Chad 2019, Congo 2015, Côte d'Ivoire 2016, Ghana 2017, Guinea Bissau2019, Mauritania 2015, and Togo 2017).

Note: Assumes 1 classroom for every 40 students does not account for the crowdedness of existing classrooms. Since average student-classroom ratio is over 40 for most countries, these estimates are lower bound estimates for the required number of additional classrooms for maintaining student-classroom ratio of 40. The bar representing 'Accommodate current OOSC' for Nigeria has been truncated for better visual representation of data for countries with smaller values.

Challenge of Balancing of Priority Between Access and Quality

Is building schools a worth investment compared to investing on quality education? This debate is not specific to AFW countries and has been exacerbated in the 2010s as, assessment after assessment, countries discovered that enrolled pupils do not learn in schools or learn very little compared to what is expected of them to learn in school. This new information comforted donors to intensify trade off funding from access to quality, closing eyes on the simple fact that quality education cannot take place under trees and need to take place in a classroom-building with minimum standard. That was common sense, but not

backed by knowledge following standards. Fortunately, more recent knowledge draws the attention on the impact of school infrastructure on quality education. Factors that are all linked to school infrastructure construction such as small school size, locally distributed schools closer to pupils' residence, relatively small class size, and relatively low density of classroom occupancy are all positively associated with pupils' academic outcomes (Barrett et al., 2019). The tension between access versus quality is now replaced by an accepted combination between access and quality.

Even as a large share of school-age children are out of school in many countries in the region, those who attend school study in extremely overcrowded classrooms that are often not conducive for learning. Classroom to student ratio is over 40 in most of the countries in the region (Figure 6a). Some countries such as the Republic of Congo, Chad and Central African Republic have average classroom size of over 60. Even in countries with relatively low student classroom ratio, within country variation in student classroom ratio is high. For example, although the average student classroom ratio in Nigeria is 40, student classroom ratio is above 60 in 8 out of 37 states of Nigeria (Figure 6b). Highly populous states such as Kano and Katsina have student classroom ratio of 79 and 94, respectively. The variation in pupil-classroom ratio is even higher at the school level, with certain schools with much higher pupil-classroom ratios as compared to average ratio for the country. Average pupil-classroom ratio in rural schools in Nigeria is 43 as compared to 37.5 for urban schools. There is a wide variation in the pupil-classroom ratio across schools within many of the countries in the region (Figure 7). For bigger countries like Nigeria, there is wide variation in pupil-classroom ratio even for schools within a geographic or geopolitical region.

Figure 6a. Pupil-classroom ratio in primary schools in selected AFW countries

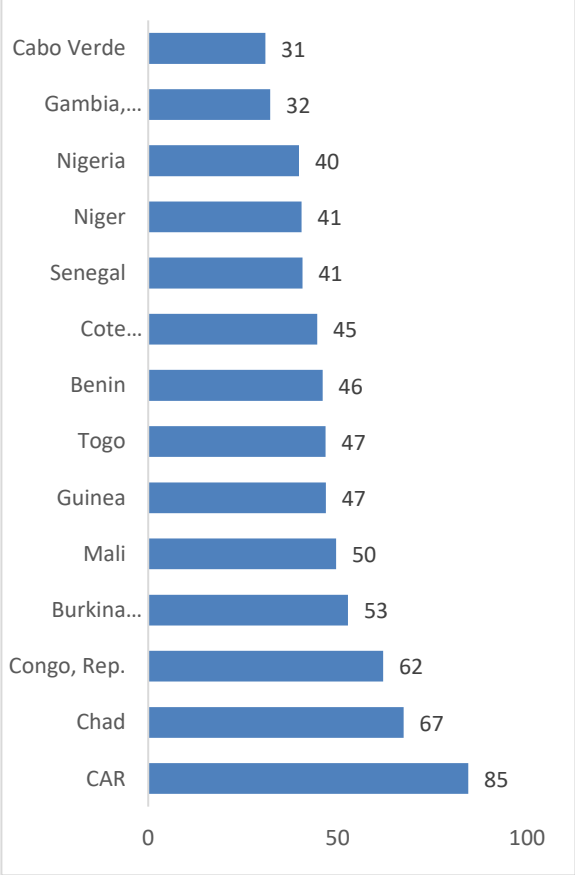
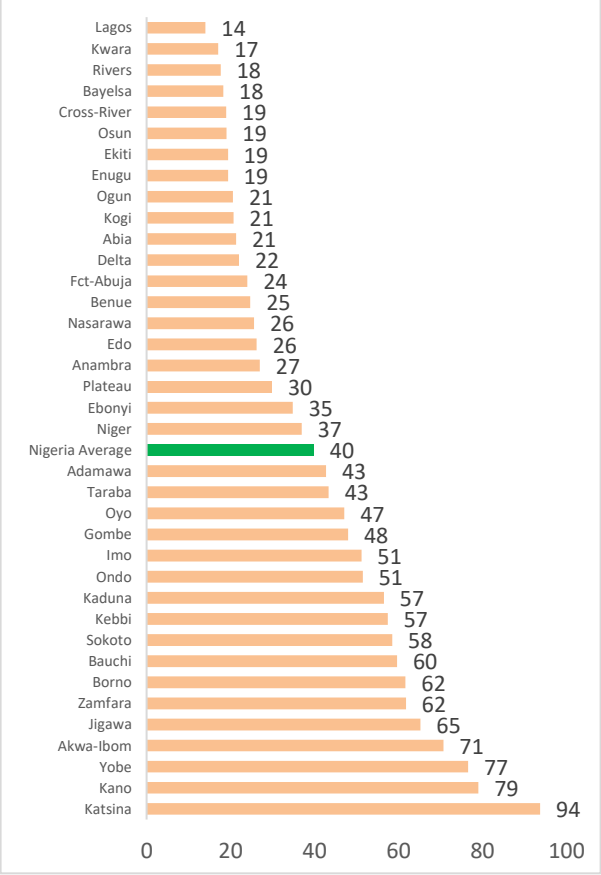
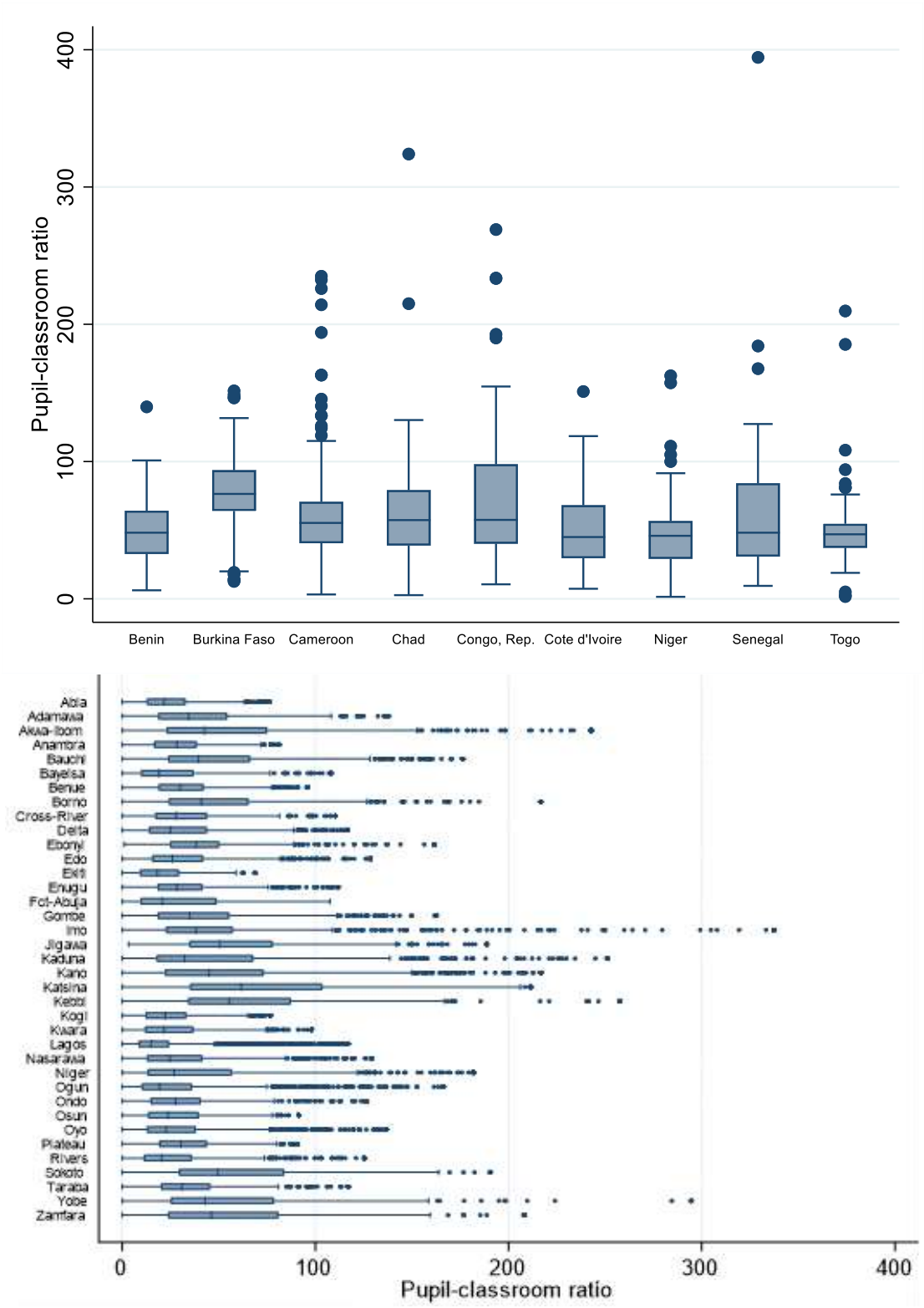


Figure 6b. Variation in pupil-classroom ratio in primary schools by states in Nigeria



Source: NPA 2018 for Nigeria and UIS Statistics for all other countries

Figure 7. Distribution of pupil-classroom ratio in selected countries and states of Nigeria



Source: PASEC 2014 and NLA 2018

Schools in the AFW region also lack access to safe drinking water facilities and proper sanitation facilities. Only about 46 percent of primary schools, 63 percent of lower secondary schools and 72 percent of upper secondary schools in the region report having access to safe drinking water facility (Figure 8). Similarly, only 56 percent of primary schools, and 68 percent of lower and upper secondary schools report having access to proper toilet or sanitation facilities (Figure 9). Access to safe drinking water and handwashing facilities are critical for ensuring a safe learning environment especially in the context of COVID-19 and other communicable diseases affecting the region. Access to gender friendly sanitation facilities is also important to ensure a safe and inclusive learning environment for all, including girls. Of course, schools are not isolated islands in their own countries or communities. Access to these services among general population largely determines the capacity and willingness of relevant authorities to make these services available in schools. Data shows that in comparison with the proportion of households in the country, lower proportion of schools have access to drinking water facility and higher proportion of schools have access to basic sanitation facilities. According to recent Demographic and Health Surveys for countries in the AFW region, about 2 in 3 households report having access to an improved drinking water source and 1 in 2 households report having access to an improved sanitation facility.

Figure 8. Proportion of schools with access to drinking water (%)

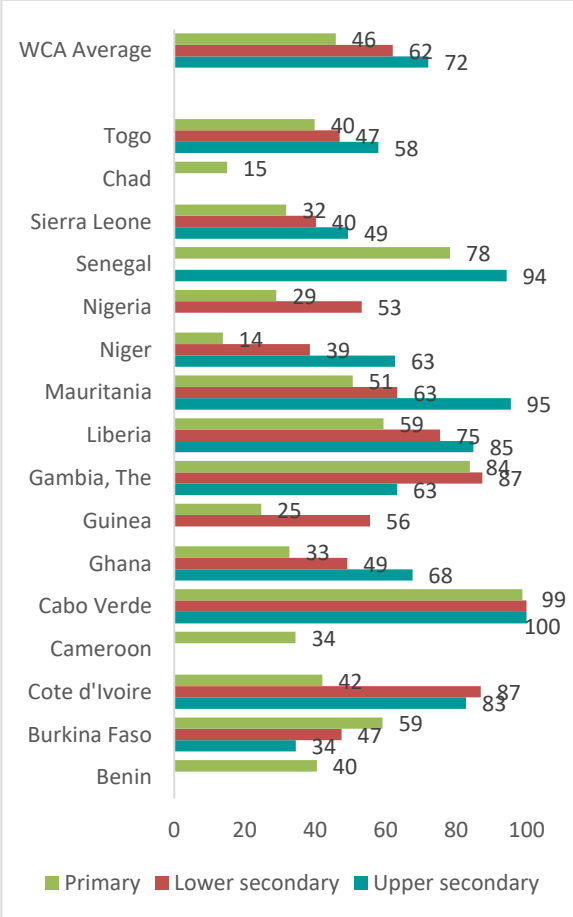
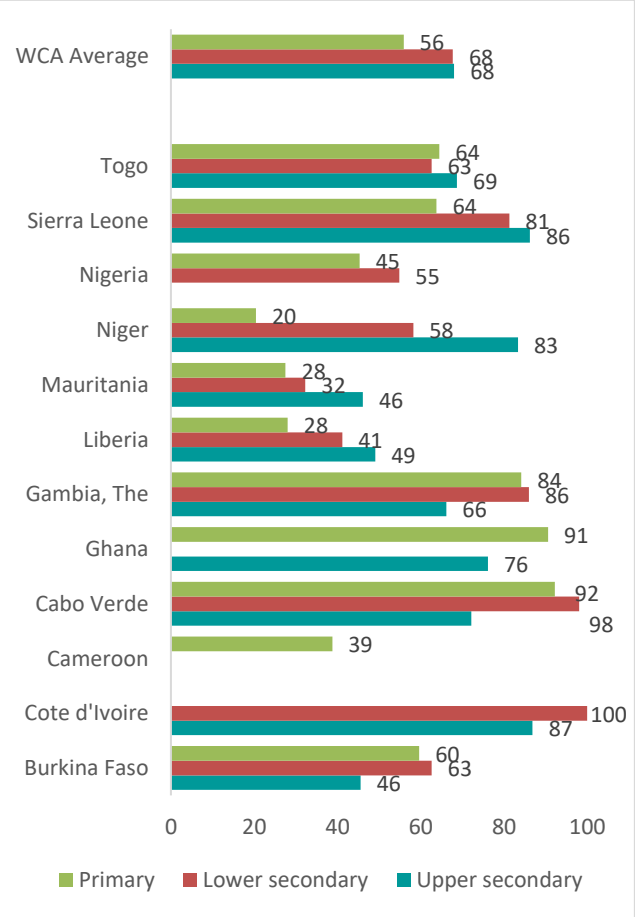


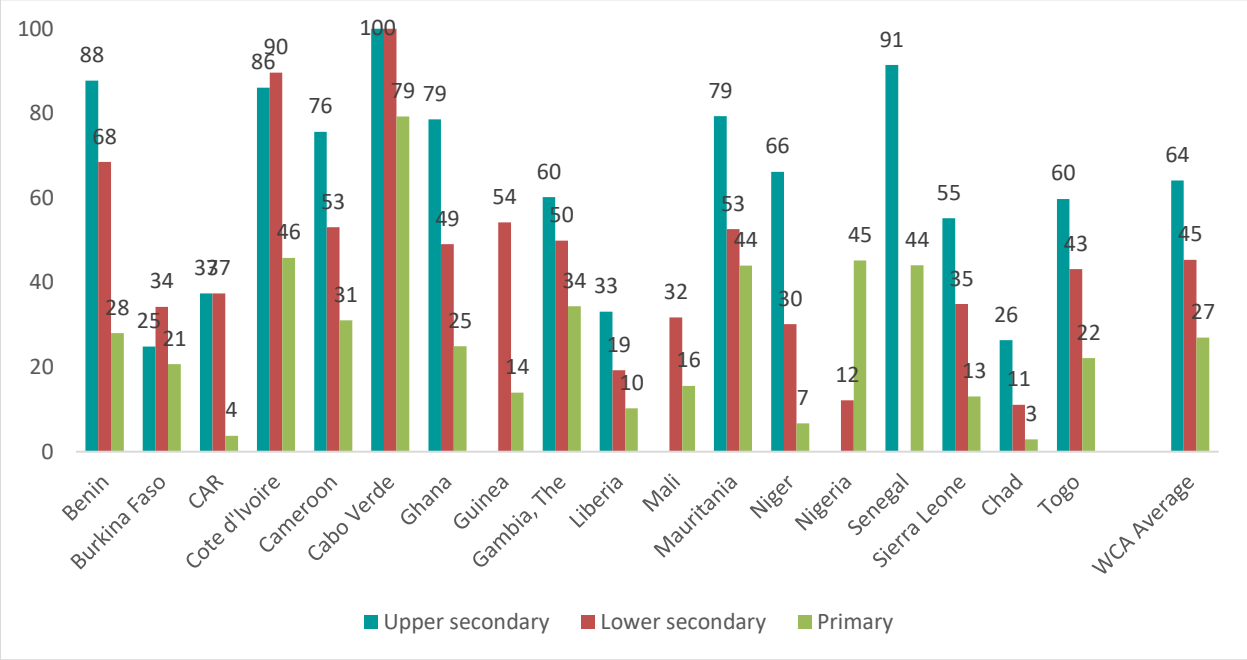
Figure 9. Proportion of schools with access to basic sanitation (toilets) (%)



Source: Analysis based on WDI and NPA 2018 for Nigeria

Many schools in the region do not have access to electricity. Lack of electricity means that many schools are not in a position to make use of technology that are being increasingly used even in low-resource settings to improve teaching and learning practices. Only 27 percent of primary schools, 45 percent of lower secondary schools and 64 percent of upper secondary schools have access to electricity (Figure 10). Access to electricity is especially important for incorporating digital technology and computer into secondary school curriculum. Given that many schools in the region still lack access to electricity it is not surprising that only a small fraction of schools in the region have access to internet connection and computers for pedagogical purposes (Figure 11 and Figure 12).

Figure 10. Proportion of schools with access to electricity (%)



Source: Analysis based on WDI and NPA 2018 for Nigeria

Figure 11. Proportion of schools with access to computers for pedagogical purposes (%)

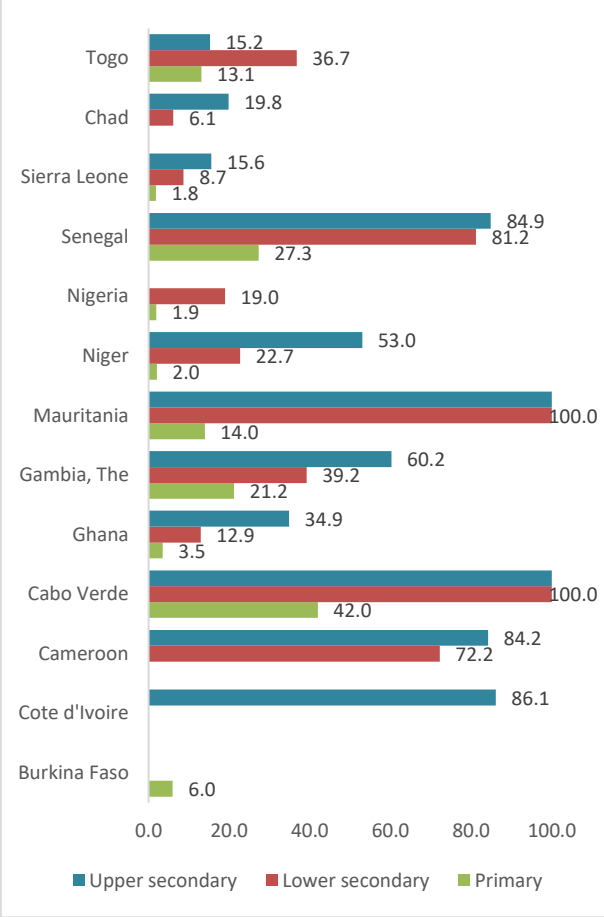
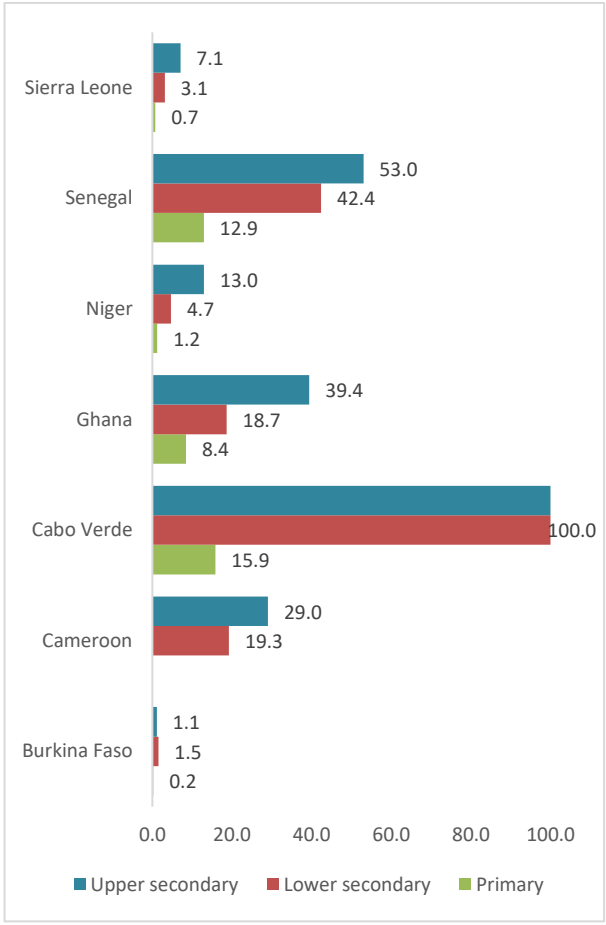


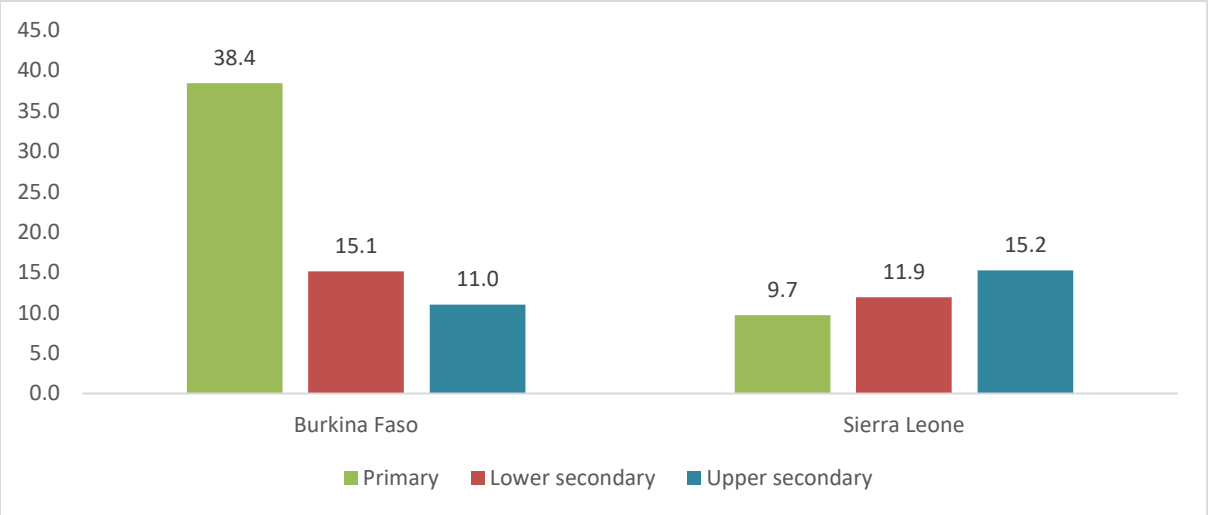
Figure 12. Proportion of schools with access to internet for pedagogical purposes (%)



Source: Analysis based on WDI and NPA 2018 for Nigeria

Limited available data suggests that only a small number of schools in the region have school infrastructure that has been adapted to accommodate the needs of the students with disabilities (Figure 13). It should also be noted that the provision of ramps to access classrooms or school buildings or other accessibility services inside the school is futile if schools themselves are not accessible for children with disability. Therefore, it is important that schools are situated in locations that are connected by roads or by wheelchair- friendly paths with major population centers.

Figure 13. Proportion of schools with access to adapted infrastructure and materials for students with disabilities (%)

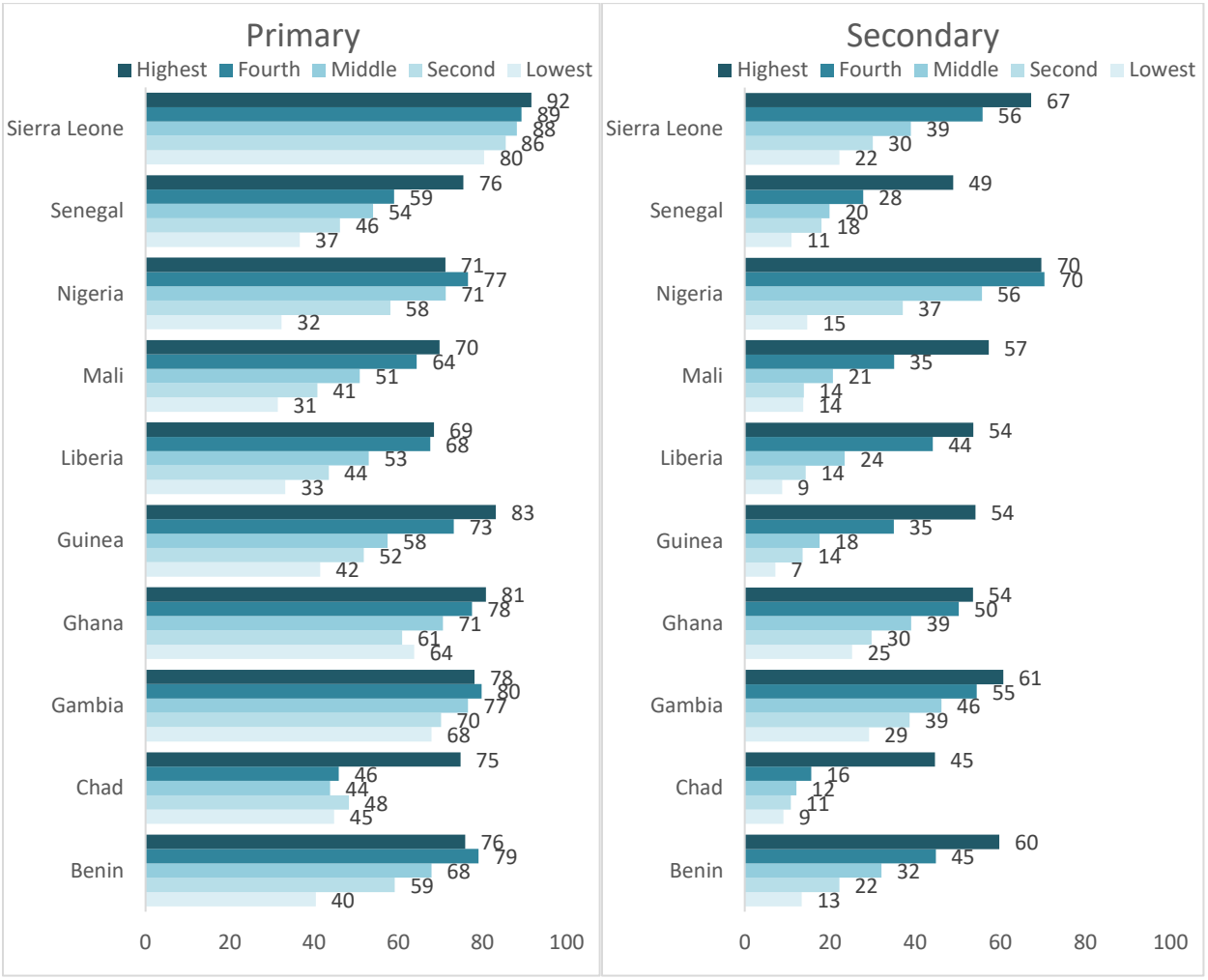


Source: WDI database

The Poverty Challenge

The poor and the vulnerable children are most impacted by lack of access to education services. Children from poorer households have consistently lower access to both primary and secondary education in most countries in the region. The gap in access to primary education between children from the poorest wealth quintile households and the richest wealth quintile households in terms of net attendance rate is as high as 41 percentage points in Guinea, 39 percentage points in Senegal, Nigeria and Mali, 36 percentage points in Benin and Liberia, and 30 percentage points in Chad (Figure 14). The gap in access to secondary education as measured by net attendance rate is even more acute. The gap in net attendance rate between children from the poorest wealth quintile households and the richest wealth quintile households is as high as 55 percentage points in Nigeria, 47 percentage points in Benin and Guinea, 45 percentage points in Sierra Leone and Liberia, 43 percentage points in Mali, 38 percentage points in Senegal, 36 percentage points in Chad, 32 percentage points in Gambia, and 29 percentage points in Ghana.

Figure 14. Primary and secondary net attendance rates by household wealth quintiles

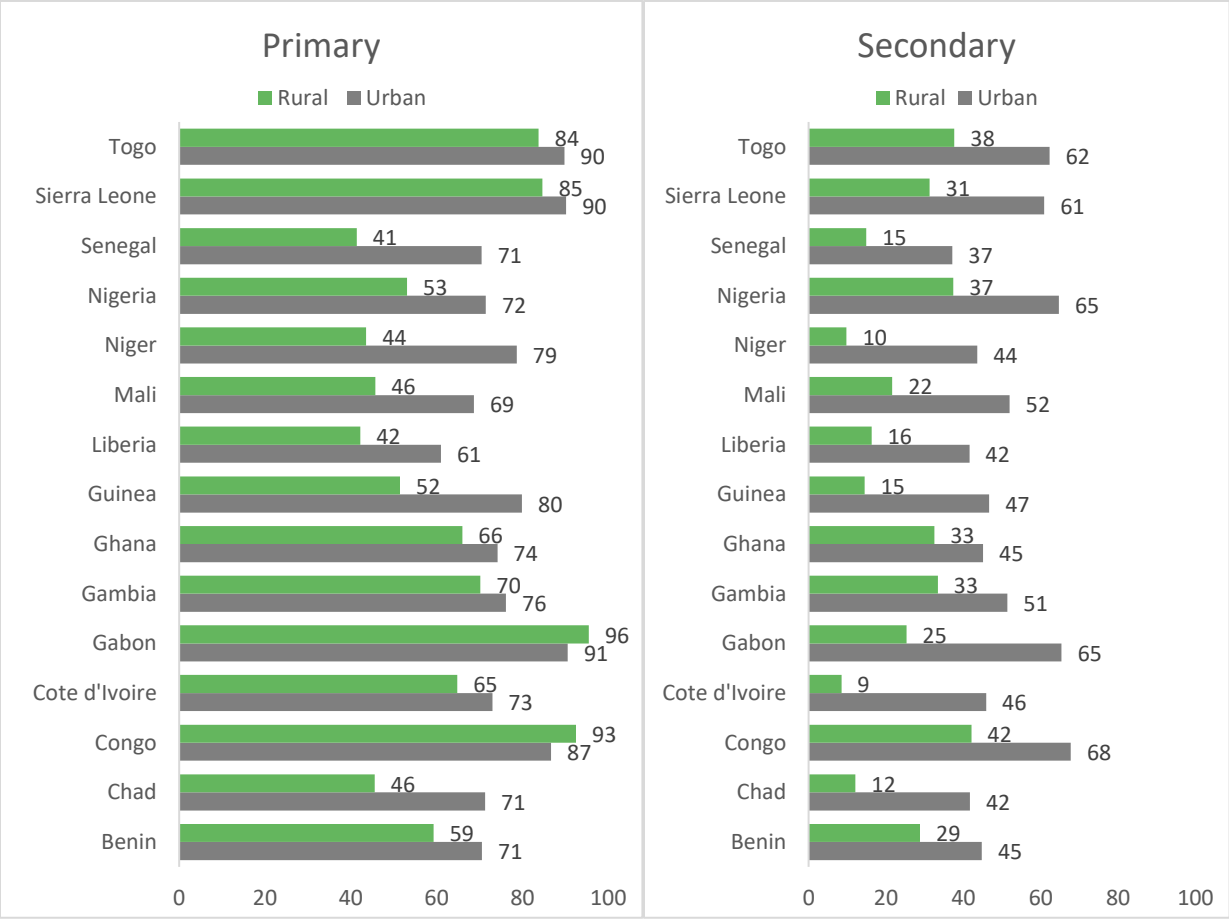


Source: Latest available Demographic and Health Surveys (2014-2019).

The Rural Challenge

There is also a huge disparity in access to primary and secondary education for children from households in rural and urban areas. The rural urban divide in access to education is large for both primary and secondary education, with the divide being even more stark at the secondary level. The net attendance rate is higher for children from urban areas for most of the countries in the region with exceptions for Gabon and Congo. The Primary net attendance rate is higher among children from urban households by as much as, 35 percentage points in Niger, 30 percentage points in Senegal, 28 percentage points in Guinea, 27 percentage points in Chad, 23 percentage points in Mali, and 19 percentage points in Liberia and Nigeria (Figure 15). The net attendance rate in secondary education is higher among children from urban areas for all countries in the region. The net attendance rate is higher for urban children by 30 percentage points or higher for seven countries in the region and 25 percentage points or higher for five additional countries in the region.

Figure 15. Primary and Secondary net attendance rate in rural and urban locations in selected AFW countries



Source: Latest available Demographic and Health Surveys (2011-2019).

Inefficient Infrastructure Development Planning Challenge

Most AFW countries have relied on traditional planning and implementation methods for school infrastructure development. Most countries practice top-down planning, with some countries combining top-down planning with bottom-up planning. Norms and standards vary across countries reflecting the tension between the desire to have quality comprehensive infrastructure package and the availability of resources to provide this package to all schools. The implementation arrangements for school infrastructure program also varies from centralized approach putting the main responsibility of school construction at the Ministry of Education to more decentralized approached empowering local authorities and communities to manage school infrastructure projects. The cost-effectiveness therefore varies across countries depending on the approaches adopted. Annex 1, drawing from Theunynck (2020), summarizes the practices adopted by AFW countries in (i) planning; (ii) selection of norms and standards; (iii) value for money considerations; and (iv) implementation arrangements.

Availability of low-cost geospatial technology is a game-changer that has potential to make high impact on the efficient and equitable allocation of resources for school infrastructure development. Despite the availability of low-cost geospatial technologies in recent years, countries in the AFW region have not

been able to leverage the full potential of geospatial data for planning and monitoring of school infrastructure provision. Although the use of tablets in digital data collection has made it extremely easy for collection of school geo-coordinates along with other school-related information, many countries in the AFW region still do not collect geospatial data. Figure 16a-d and 17 below are presented as examples on how geospatial data can be used to generate useful information for planning of school construction and school infrastructure improvement. Without geo-referenced school and school infrastructure data, critical insights that could be made possible using geospatial data analytics are missed, for instance, answers to questions such as: What percent of the school-age population do not have access to schools within 2 or 3 km distance? How many schools need to be built and where should the new schools be located to provide easy access to schools for all children? Which communities or population centers do not have access to a secondary school?, and so on.

Figure 16a. Primary schools situated within and beyond 3 KM of nearest JSS in Nigeria

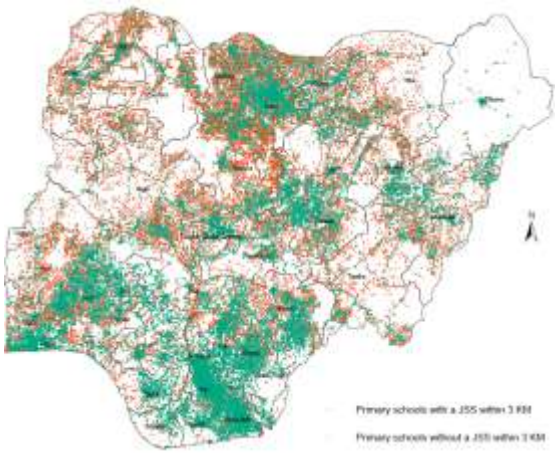
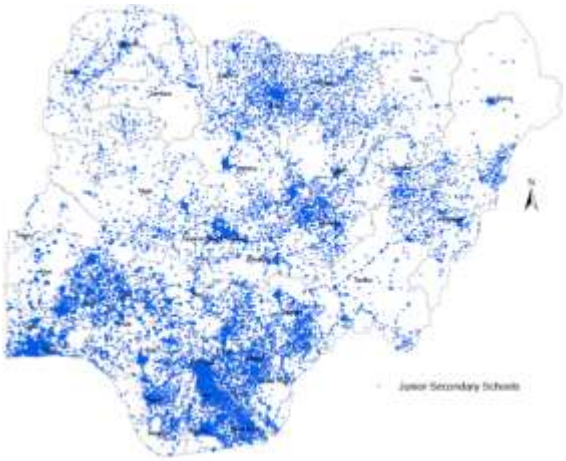


Figure 16b. Network of JSS in Nigeria



Source: Analysis based on NPA 2018.

Figure 16c. Primary schools situated within and beyond 3 KM of nearest JSS in Katsina State Nigeria

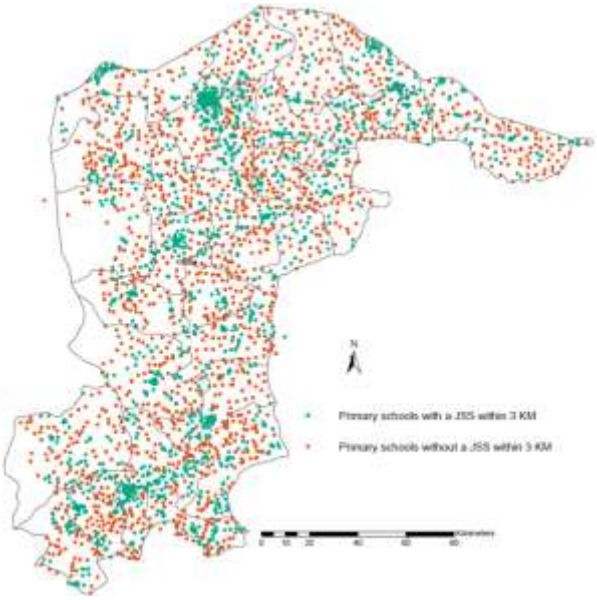
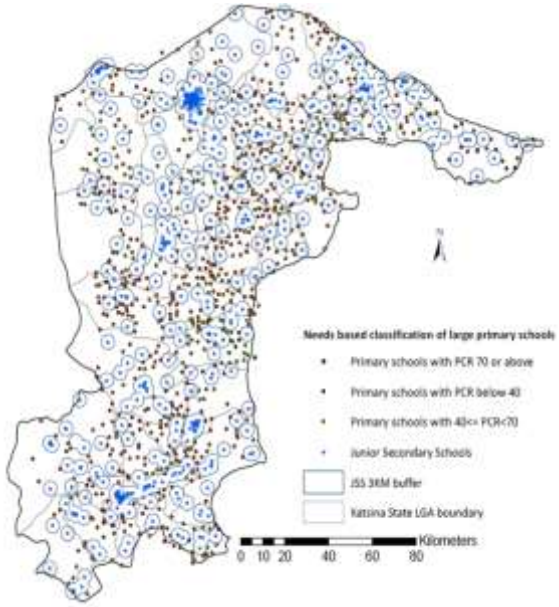
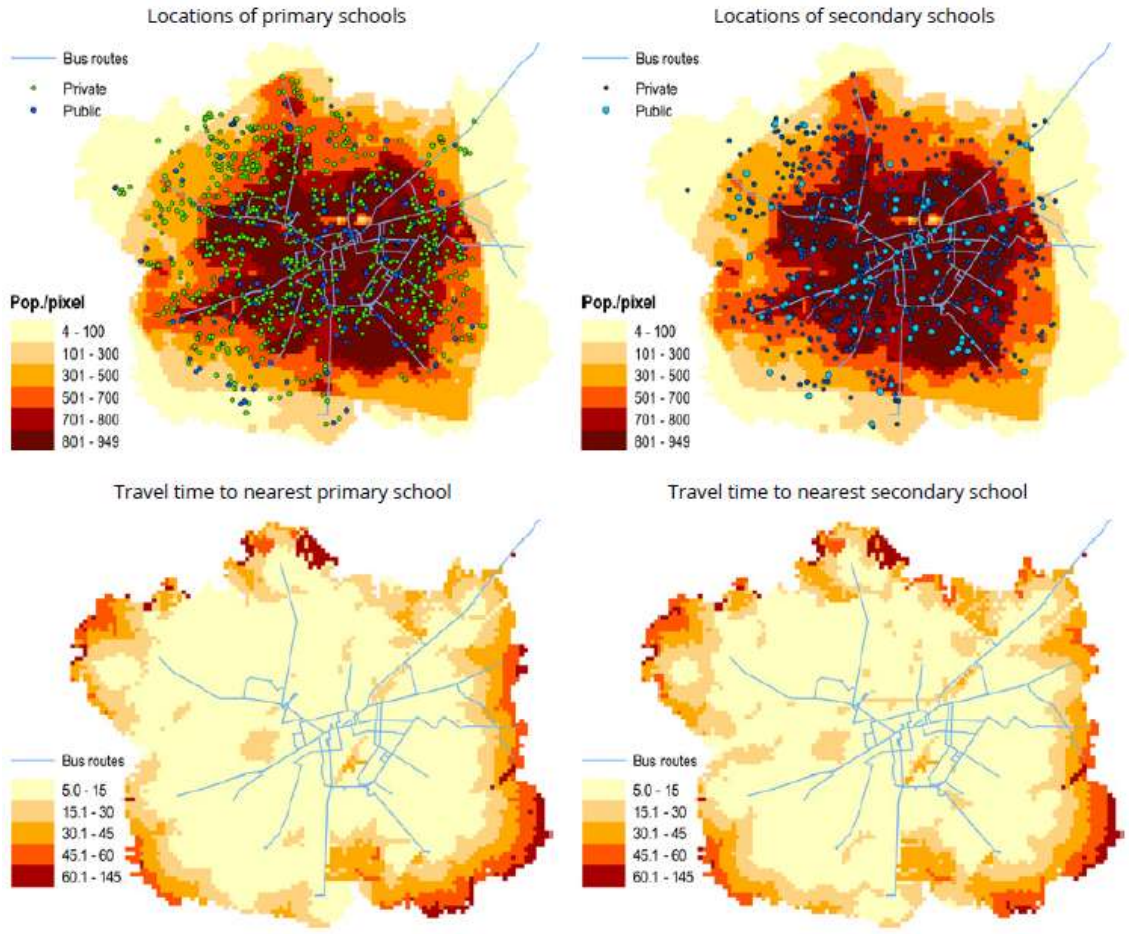


Figure 16d. Large public primary schools situated beyond 3 km of nearest JSS in Katsina State, Nigeria



Source: Analysis based on NPA 2018.

Figure 17. Locations and travel time by public transport to nearest primary and secondary school in Ouagadougou, Burkina Faso



Source: World Bank. 2021c. Connectivity for Human Capital: Realizing the Right to Education and Healthcare through Improved Public Transport in African Cities. Mobility and Transport Connectivity;. World Bank, Washington, DC

4. World Bank Portfolio for School Infrastructure

Infrastructure investment accounts for more than 25 percent financing in the AFW active education portfolio. Total infrastructure commitment is US$554m, a significant amount when compared with investment in Teachers (US$778 million), curriculum and instruction materials (US$361 million) and Governance (US$518m). In addition, many projects include school infrastructure development and rehabilitation as one eligible category under the menu of options for school grants programs. Only three countries' programs (Cape Verde, Republic of Congo and Guinea-Bissau) do not include specific commitment for infrastructure. The remaining nineteen countries' programs all include infrastructure investment, with highest concentration in basic education, followed by secondary education, TVET (skills development) and higher education. Beyond programs led by the Education Practice, several programs

led by other practices such as Social Protection and Jobs, Urban and Social Development and Water also include programs that support school infrastructure, water and sanitation facilities. For example, under the Nigeria Community Social Development Program (P090644), school construction was chosen as the highest priority by participating communities. More than 5700 classrooms were rehabilitated and built with the community grants, benefitting more than 1.8 million students in this program led by the SPJ practice.

This level of commitment puts the World Bank as the lead amongst development partners in education infrastructure financing in the region. The commitment reflects the recognition of the dire need to improve infrastructure availability for children that are schooling-deprived and improve learning conditions for children that are learning-deprived in the region. This substantial commitment also puts the World Bank in a unique position to influence countries' policies and practices in education infrastructure development, i.e., how much to invest in infrastructure, where to build, what to build, how to build and how to maintain the quality of infrastructure.

5. Recommendations on School Construction Decision Process

Below we summarize several decision points World Bank project teams are likely to come across as they consider inclusion of school construction components into countries' education sector engagement program.

Decision point 1: Inclusion of infrastructure in education projects and programs

The first decision that the project teams need to make is whether to include school infrastructure or school construction components in their projects. Teams should conduct school construction needs analysis to make decision on whether to include infrastructure component and whether to opt for new school construction or addition/renovation of infrastructure in existing schools. School construction needs analysis should also include assessment of the magnitude of the OOS children for different age-group, need for additional classrooms to maintain recommended class size including considerations for future growth in the population of school-age children, conditions and volume of current stock of school infrastructure, distance to school or time taken to commute to and from school. School construction needs analysis should be carried out bearing in mind any historical imbalances in access to education for different sub-national or sub-population groups in the country and the projected future demand for school facilities.

Table 1 below provides guidance on the choice between inclusion of school infrastructure components in education lending projects and on the choice between new school construction component or addition to /upgrading of existing school infrastructure.

Table 1. Itineraries for decision on inclusion of school infrastructure component in education lending projects

Infrastructure		
New school construction	Infrastructure upgrading / renovation / addition	No Infrastructure
• If there are significant number of out-of-school children of school-going age living in communities that are beyond a reasonable walking distance to government/public schools ○ 20 minutes for Primary (<=1.5 km) ○ 30 minutes for JSS (<=3 km) ○ 45 minutes for SSS (<=5 km) • If significant number of children currently attending government/public schools do so by commuting from long distances ○ 20 minutes for Primary (>1.5 km) ○ 30 minutes for JSS (>3 km) ○ 45 minutes for SSS (>5 km) • Existence of imbalances in access to education. For example, classrooms in certain parts of the country are over-crowed even though the overall national average pupil-classroom ratio is below 40 or students in certain part of the country need to walk for much longer time / distances to commute to and from school. • If the overall goal is to reduce commute time and bring schools closer to children. • In case of emergence of new population settlements as a result of relocation of communities as a result of natural disasters or conflicts.	• If the ratio of students to classroom is high (more than 40 students per classroom) • If the existing school infrastructure is in dilapidated condition and not safe for students or conducive for learning • If the current structures do not meet the minimum standards for school infrastructure • If the overall goal is not to reduce commute time and bring schools closer to children and have plans to build boarding facilities for students • If the existing number of classrooms are not sufficient to reasonably accommodate (maintaining 40 students per classroom) projected population of school-age children in the near future (next 10-15 years). • The need to replace non-standard and unsustainable classrooms, including the reconstruction needs of the classrooms destroyed by any recent episodes of disasters such as floods, earthquake, conflict, etc • The rooms to be added so that the average size of a teaching group evolves towards the goal of 40 or fewer pupils per classroom • Existence of imbalances in access to education.	• If there are no significant number of out-of-school children • If children currently attending school are not required to commute from long distances • If school infrastructure meets the minimum standards and ratio of students to classrooms is less than 40. • No existing imbalances in access to education at the sub-national or the sub-population level.

Decision point 2: Macro-planning allocation of infrastructure financing across education sub-sectors and sub-national entities

Once a decision is made to include infrastructure financing, project teams should work with relevant government agencies on macro planning which involves making decisions on distribution of capital between subsectors (pre-primary, primary, lower-secondary, upper secondary) and between geographical sub-national entities. World Bank projects could be designed so that the government agencies involved in macro-planning allocation of infrastructure financing are incentivized to develop

plans that ensure that the resources are allocated in an equitable manner and address any existing inequalities in access to educational services.

a. **Decision on distribution of funds between subsectors should be based on some type of simulation model**, which typically simulates the projected enrollments on the basis of demographic projections and assumptions for specific ratios (class-size, transition rates, etc.), standards (pupils per classroom ratios, PCRs, etc.) and policies (repetition, transition, etc,). Simulation models should add detailed simulations for capital expenditures and allow to run various scenarios based on different unit cost assumptions, not only for classrooms but for the full package of facilities, because standards for construction are very different by sub-sector. Then, the main question is: how much is the unit cost for capital, i.e. what should be the standard package of facilities in each sub-sector.

b. **Distribution of public capital for school construction between geographical sub-national entities to correct existing supply imbalances between them**. The simplest method to redress specific imbalances is targeting i.e., selecting specific underserved areas, communities, schools that become the target of a project. Targeting is efficient when a specific imbalance becomes a major issue, or when a specific group is so far behind that it would not join the mainstream without a positive discrimination at a certain point of time or during a certain period, with public capital. Target may be: remote rural locations; areas with no school at all; most overcrowded schools; geographic areas with lowest enrollment, or lowest achievement rates; post-conflict areas, etc.

Decision point 3: Micro-planning: Where to build a new school facility?

Once macro-planning allocates infrastructure financing across education sub-sectors and sub-national entities, the next decision is to conduct micro-planning to figure out where to build new schools. To make the planning decision on school construction locations for new schools, countries follow either the top-down (central planning) approach, bottom-up (community-driven) approach, or the mixed approach. While the approach a country takes in micro-planning of school construction is dependent on the existing institutions and education system in the country, project teams may be able to influence the choice of the approach through policy advocacy and inclusion of appropriate incentive structures in the project design.

The mixed approach is the recommended approach as it has the advantage of combining positive aspects of both the top-down and bottom-up approaches. This approach allows for macro-planning to be conducted by the center taking a top-down approach while also allowing for micro-planning of school construction at the community level. The top-down macro planning in the first stage allows for using pro-equity criteria to allocate capital funds across sub-levels (regions/ province/ districts/ local governments) down to the lower level of institutional planning at the district /local government level. The community driven approach in the second phase allows for the mitigation of the risk of supply/demand mismatch on the ground as well as in generation of sense of ownership of the school infrastructure by the community members.

Decision point 4: Choice of school construction package

25. **The choice of school construction package is dependent on the choice of norms and standards.** Project teams may take into account the following norms and standards for informing their choice of school construction package.

Norm 1. *Maximum distance from home-to-school*. This norm relates to cost-effective and equity-driven options for bringing schools closer to communities. The choice of the right maximum

distance-to-school norm is a strategic choice as regards the *equity* dimension of the school network. It defines the radius of the catchment area where the children who are intended to be served by the school live.

- *A long maximum-distance norm* makes access difficult for groups of children (rural, girls, poor), keeps boarding schools necessary, results in large schools and often overcrowded classrooms, altogether negatively impacting access, efficiency, equity and sustainability.
- *A short maximum-distance norm* is an efficient tool to incrementally move towards long-term universal accessibility to day-schools, which appears to be the unique sustainable equitable model for basic education in low-income countries. The recommended norm is 1 or 2 km for primary schools and 3 to 4 km for lower secondary schools. The smaller number is preferable to the higher.

Norm 2. *Minimal architectural norms and standards for classrooms*. A cost-efficient architectural design should be based on the following minimal norms and eliminate any fancy/costly architectural feature that has not been proven to effectively contribute to improve learning: (a) optimum number of pupils per classrooms (The standard 40 PCR is gradually adopted by most low-income countries), (b) unit standard per student, (c) minimum lighting and ventilation for effective learning, (d) optimum amount of color and visual interest in learning spaces is a very cost-effective way to improve learning outcomes, and (e) choice of standard classroom drawings. If the standard classroom drawings are close to the required standards, it is recommended that the projects opt for the current set of standard drawings with small adjustments, if necessary.

Norm 3. *Minimal technical norms and standards, and technology choice*. Criteria/rationale for the choices are related to technical feasibility, durability (efficiency), cost (cost-effectiveness) and the possibility for use of local contractors/available materials and untrained local workers (scale-up and sustainability) with considerations for environmental standards.

Norm 4. *Norms/standards for safe access to and inclusive use of schools and sanitation*
This norm relates to setting standards for satisfactory compliance with international standards for safe and inclusive use and access of school facilities. It involves setting standards or improvement in pupils/latrine ratio, sanitation technology, handicap-friendly and girl-friendly sanitation. Although these improvements will incur slight additional unit costs, these are essential for equity considerations.

Norm 5. *Norms/standards for the Minimum package of school facilities*. The perimeter of the minimum package of facilities is important cost-driver of any school construction program. Thus, this is the first element of consideration to assess the feasibility to achieve the national “vision” to provide quality universal primary and secondary education at a foreseeable horizon. Apart from the non-questionable items such as (classrooms, sanitation, water, office/storage, playground (for pre-primary), corner library (primary and above), electricity (junior secondary and above), and laboratory (senior secondary), other costly items are subject of discussions and depend on unique circumstances of each country.

Table 2. Minimum standard package for school infrastructure

The minimum standard package must include:

Pre-primary	Primary	Junior Secondary	Senior Secondary
• Classrooms • Sanitation/ Toilets • Drinking water • Office/storage room • Playground	• Classrooms • Sanitation/ Toilets • Drinking water • Office/storage room • Corner Library or book cabinet in each classroom	• Classrooms • Sanitation/ Gender-specific Toilets • Drinking water • Office/storage room • Corner Library or book cabinet in each classroom • Electricity/ Solar	• Classrooms • Sanitation/ Gender-specific Toilets • Drinking water • Office/storage room • Access to potable water • Corner Library or book cabinet in each classroom • Laboratory • Electricity/ Solar

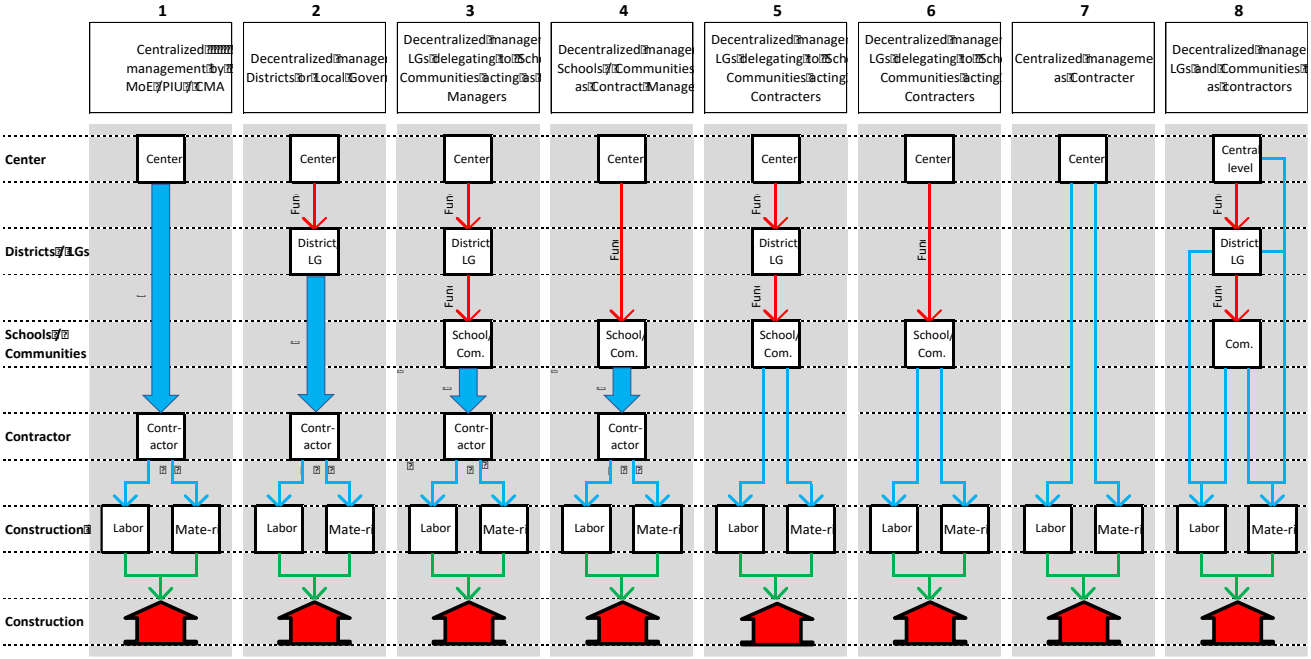
Additional items to be considered to add to the minimum standard package depending on the specific situation including feasibility and demand. While most items listed below are essential items if the funding constraints are not an issue, some items may be redundant depending on the norms that has been set for school construction.

Pre-primary	Primary	Junior Secondary	Senior Secondary
• Electricity/Solar • School fence (in urban areas to isolate schools from crowd and prevent children from running to traffic) • Teacher-houses (If majority of teachers are not locally recruited and additional incentives are needed to attract teachers in hard to reach or rural locations with fewer amenities) • Dining facilities • Sickbay • Internet	• Electricity/Solar • Playground • School fence (in urban areas to isolate schools from crowd and prevent children from running to traffic) • Sickbay • Internet • Teacher-houses (If majority of teachers are not locally recruited and additional incentives are needed to attract teachers in hard to reach or rural locations with fewer amenities) • Dining facilities	• Playground • Sickbay • Internet • Laboratory • School library • School fence (in urban areas to isolate schools from crowd • Teacher-houses (If majority of teachers are not locally recruited and additional incentives are needed to attract teachers in hard to reach or rural locations with fewer amenities) • Boarding facilities (If norm opts for larger schools that may be further away from population centers) • Dining facilities	• Playground • Sickbay • Internet • School library • School fence (in urban areas to isolate schools from crowd) • Teacher-houses (If majority of teachers are not locally recruited and additional incentives are needed to attract teachers in hard to reach or rural locations with fewer amenities) • Boarding facilities (If norm opts for larger schools that may be further away from population centers) • Dining facilities

Decision Point 5: Implementation arrangement

The choice of the *procurement entity* is the core element of the decision on selection of implementation arrangement. The choices of the *procurement methods* largely depend on the choice of the *implementation entity*. Theunynck (2020) provides a menu of choices consisting of eight different options, grouped into three main categories:

Figure 18. Options for school construction implementation



Source: Theunynck (2020).

i. ***Centralized implementation***. Centralized procurement is found in centralized countries where the MoE has full capability and authority for school construction. At his junction, centralized countries have two options:

a. *Centralized procurement*. This approach most often goes to large procurement packages often yielding to high costs and transaction bottlenecks.

b. *Use of CDD approach*. This approach, which delegate the procurement and financial management of sub-projects to communities empowered by the Central MoE, has been proven to be efficient and cost-effective.

ii. ***Decentralization to local governments.*** Many countries have joined the world-wide decentralization movement. When the school construction authority is delegated by law to the Local Governments (LG), LGs have to comply with the sector policy in the matter. Thus, the sector policy would provide the framework to be followed by LGs, which have mainly 3 options.

a. *Resistance to decentralization*. This is not uncommon. The main problem is the multiplication of approaches in the same country, which prevents to work on improving the mainstream (decentralization).

b. *Direct procurement by LGs*. This is one of the two options of the mainstream. This option has yield mixed results, in terms of cost-effectiveness, and accountability. Typically, LGs tend to mimic, at their level, the defects of centralization.
c. *Decentralization to LGs with delegation empowered to communities through local and community driven development (LCDD)*. This approach provides checks-and-balance between LGs and communities, which bring cost-effectiveness.

iii. Community empowerment to manage school construction. "Community empowerment" means community responsibility for procurement and financial management of the works, which is the full CDD concept. This implementation choice can be decided either by the central MoE in centralized countries, or by LGs in decentralized countries (the LCDD approach). This approach yields highly cost-effective outputs (low-cost school construction), and to contribute to the local economy (local jobs and trade) by providing local business opportunities. Within this option, there are two sub-options:

a. *Procurement of works through contractors*. This sub-option is the procurement method named *Local Competitive Bidding*. It has the additional advantage to contribute to the development of the small-scale construction industry.

b. *No contractor*. Communities procure materials and labor, so playing the role of a contractor. This approach bears the risk of lower quality of works because of difficult enforcement of technical supervision.

Decision Point 6: Inclusion of school maintenance component

Project teams should consider adding maintenance component to their projects to ensure sustainability of all infrastructure projects. Ideally SBMCs or local communities should be encouraged and empowered to take ownership of the school infrastructure and should be responsible for the maintenance and sustainability of school infrastructure.

6. Short and Medium-Term Considerations

Short term: Availability of low-cost digital data collection technology has significantly reduced the cost of collection of high-quality high frequency data that can be used for making informed decisions on school investments and facilitating better education system planning. Implementation of policies and framework for improving data collection using digital formats for collection of data on school infrastructure and making use of such data along with geo-referenced school network and population data can help make informed decisions on school infrastructure investment to build new schools or upgrade existing schools. Data driven education system planning and school investment strategy can help countries make efficient and equitable allocation of scarce resources. World Bank can help countries institute a system of data driven education policy and investment decisions by helping strengthen the education data collection and the education management information system (EMIS). Implementation of policies and framework for improving data collection using digital formats for collection of data on school infrastructure and making use of such data along with geo-referenced school network and population data can help make informed decisions on school infrastructure investment to build new schools or upgrade existing schools. Making

proper use low-cost geospatial technology and framework for implementing data driven decision making in the education system is a low-hanging fruit and has potential to make high impact on the efficient and equitable allocation of resources. This low-hanging fruit yet potentially high impact action can be carried out as Advisory Services and Analytics (ASA) or Investment Project Financing (IPF).

Medium term: Medium term interventions can aim at influencing countries' education infrastructure budget mobilization, allocation, execution, and monitoring. The first important prerequisite is to support countries to develop their education infrastructure development strategy that reflect the country demographic trends, school enrolment and learning needs, the existing supply and conditions of infrastructure and the resulting infrastructure needs. This strategy will help countries to depart from ad hoc approach to infrastructure investment. More importantly, the strategy will help countries to deliberate on the financing of the strategy including options for (i) increasing government budget for education infrastructure; (ii) mobilizing donor funding; and (iii) incentivizing private sector investment in the sector. The strategy shall include a set of criteria to prioritize infrastructure investment that will be used to guide the appraisal of the infrastructure funding proposals submitted by education authorities and institutions. Mechanism to allocate infrastructure funding in tandem with teacher deployment will ensure coherence and alignment between the two largest government funding streams. Guidance on essential infrastructure package (classrooms, water, sanitation, electricity and internet connection), construction standards and reasonable unit costs will facilitate the delivery of cost-effective models of infrastructure. Guidance of unit costing, and implementation modalities and their value-for-money analysis should also be included. Finally, with nowadays digital technology, monitoring of infrastructure development can be done real time with geo-referenced imaging to enable timely monitoring and completion of the works. Design, proofs of concepts and costing of the strategy and its interventions can be done as part of the ASA and IPF portfolio and the critical policy actions can be included in PforR and DPF operations.

Annex. School Infrastructure Planning and Implementation Practices

Planning school construction

Weak planning capacity is a constant characteristic of most SSA countries and AFW countries are no exceptions. The process to plan school construction is rarely country-driven and typically donor-dependent, largely influenced by the specific donor-interest at the time of the project. In theory a planning process may be top-down, bottom-up, or a combination of both, which is the more efficient process. Most Education projects reviewed for this study are planned through a top-down approach, with targeting criteria (underserved areas, overcrowded schools, etc.)

Top-down planning of schools by the MoE's central planning office is administratively easy to allocate new school facilities. However, it is often not equitable, for instance, when based on demographic prorate, or on local capacity to mobilize attention of central decision makers (urban areas receive more than rural ones). It is highly vulnerable to political influence. Targeting is a simple way to correct this. Targeting criteria can include low GER, high PCR, poverty ratio, gender gap, etc. (Examples of AFW countries to be provided here). However, the efficiency of the top-down supply-driven approach stops when it goes beyond categories defined by these criteria, and is used to target individual schools or communities, because it does not capture demand issues, which are the second face of the demand-supply coin and may supply schools that remain empty (examples? Let's see in Country Status Report where demand-side issues are noted important, see also Facing Forward).

Bottom-up planning of schools provides the immediate advantage to be demand-driven, and does not bare the risk that supply does not match demand. This approach is community-driven, giving voice and power to demanding communities. Avoiding risk of building schools that will remain empty, this choice is both *equity*- and *efficiency*-driven. It is also good *economy* of the community input. However, central management of a country-wide bottom-up approach is cumbersome. Lack of reliable data is the main constraint to get planning capacity. Bottom-up planning is a good solution, but management capacity can be an issue.

Mixed top-down *bottom-up approach*. The mixed approach has the double advantage to: a) give the opportunity to up-front develop equity across sub-levels or local governments through the top-down approach of the "macro-planning", down to the lower level of institutional planning (local government), by using pro-equity criteria to allocate capital funds; and b) to mitigate the risk of supply/demand mismatch on the ground. In addition to mitigating the supply-demand mismatch in school allocation, the "micro-planning" of the second phase of the process also helps develop school ownership by communities. The bottom-up approach from the grassroots level to the district/local government also mitigates the risk of reproduction, at this intermediate level, of the deficiencies of the top-down approach when it is conducted by the center down to the school. Risks of political interference of the local government authorities are as at least as high at the local government level than at the central level and may even be higher.

Standards and Norms

Standard and Norms are key tools to plan school construction. The main norms and standards are the following.

- Distance to school (to pre-primary, primary, and lower secondary schools);
- Standard drawings for classrooms, sanitation,
- Package of Facilities (what to include in the standard?
- Technical norms for cost-efficiency and durability/sustainability

Distance to school is the first norm to be decided upon and it is also the most strategic choice in school construction. It has a significant and direct impact on the design of the school network. There are mainly two options to guide the strategy for school construction and shape the long-term future of the school network. *A long maximum-distance norm* makes access difficult for groups of children (rural, girls, poor), keeps boarding schools necessary, results in large schools and often overcrowded classrooms, altogether negatively impacting access, efficiency, equity and sustainability. *A short maximum-distance norm* is an efficient tool to incrementally move towards long-term universal accessibility to day-schools, which appears to be the unique sustainable equitable model for basic education in low-income settings. In Burkina Faso, long distance to primary and lower secondary schools is one of the main barriers to access, while GERs were 81 percent and 37 percent respectively in 2013 (World Bank 2015a). The determination of a maximum distance *norm* between children housing and the nearest school is a key ingredient to manage the equitable development of a school network.

Standard drawings and technology. Typically, most low-income countries have adopted cost-efficient standard drawings for primary classrooms and many of them are using the same standards for lower-secondary classrooms. The standards that have been shown to contribute to improved education outcomes are (i) number of pupils per classroom, about 40; (ii) unit area per student, 1.2–1.4 square meters; (iii) minimum lighting and ventilation; and (iv) optimum amount of color and visual interest. Standard classroom drawings developed by most countries come close to these required standards, needing only small adjustments. We refer to Theunynck (2020) for further details.

The package of facilities is the first cost-driver as regards school construction. The package can vary from a very minimum, i.e. classrooms, sanitation and water, to a large "*ideal*" package including: laboratories, libraries, boarding facilities, teacher housing and many more specialized facilities. At minimum, the buildings must be durable enough to be in school use for 40 years, withstanding storms and earthquakes. They are built using (i) classic technology (cement walls and iron sheet roofs), (ii) materials prefabricated industrially, or (iii) other appropriate technology (including stabilized earth blocks). These options depend on cost, durability, technical feasibility and the feasibility of using local materials and contractors with little or no worker training. Public funds should not be used for testing innovative technologies with insufficient evidence of cost and durability

For primary schools, most low-income countries have already moved away from high-standard package of facilities and all adopted the minimum package in the last two decades, thus contributing to the enrollment success of the period. Nowadays, the issue of large package of facilities becomes again a top-level question because of the current focus shift to lower-secondary enrollment, and to higher secondary for the more advanced countries. The cost of the package can vary from 1 to 5. For secondary schools, regardless middle-schools or higher secondary ones, most SSA countries have inherited norms corresponding to the 'ideal package'. They typically do not question them, but can hardly provide them in an equitable manner. The result is a high level of inequities across schools; typically, urban ones being better served than rural ones, and the most remote being the most lagging. This is a general situation in SSA countries including South Africa, and is also the typical situation in AFW, with few exceptions such as Gabon and (possibly) Capo Verde (both to be verified. The key subjects of discussion—often controversial—are the standard provision of the following facilities

- Science laboratories
- Teacher Housing
- The provision of Boarding schools. Few countries in AFW seem to have boarding facilities although this is a norm in many Anglophone countries in Eastern and Southern Africa (ESA).

To address supply-side inequities, countries should adopt minimum standards of facilities that are

Science laboratories. Science laboratories are not essential for Primary and Lower Secondary levels. Primary curriculums promote integrated science learning; lower secondary curriculums introduce the use of science kits in classrooms. Multi-science laboratory designs are emerging for possible use in upper secondary schools as an alternative to specialized laboratories originally intended to prepare students for university. In Benin, for instance, only 32 per cent secondary schools have a laboratory (2013-14).

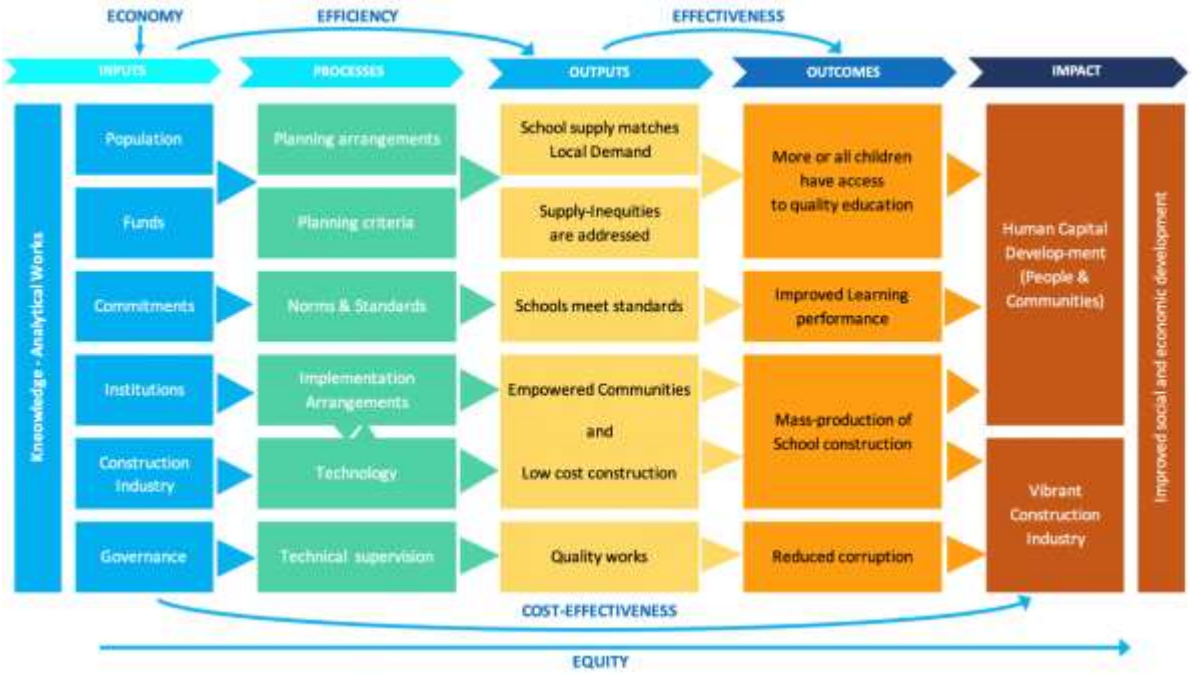
Teacher housing. Some countries consider teacher housing indispensable to staff rural schools and motivate teachers. However, there is no evidence that this incentive works. The main choice is between providing teacher housing, which can be inefficient and unaffordable at scale, or adopting other more efficient incentive and/or teacher management methods. The efficiency of different incentives is currently tested and evaluated in some countries, suggesting interesting routes that can be expanded or tested. Teacher housing is not common in AFW countries, although it is, by contrast, a common standard in Anglophone SSA countries (Uganda, Tanzania for instance). In AFW, Burkina Faso is one example of this standard: teacher housing was financed by GPE (PDSEB 2010-14) and IDA (EAQIP 2015-2020) (World Bank 2015a).

Boarding facilities. Construction of boarding facilities is directly associated with a long-maximum school distance norm for school construction which opts for fewer but larger schools. A more economical and sustainable alternative is to establish day schools within walking distance from students' home communities. This may require modifications in curriculum (number of subjects in lower secondary school) and teacher training (for multigrade teaching in primary grades, multisubject teaching in lower secondary years). Few countries in AFW have boarding facilities although this is a norm in many Anglophone countries in ESA.

Value for Money (VfM) Analysis: The Logic

A good framework to conceptualize the VfM logic concept is provided by the Department of International Development (DfID 2011). It is summarized as the "4Es", focusing on 'economy', 'efficiency', 'effectiveness', and '*equity*'. It was further complement by 'sustainability' as an overarching consideration and its content filled for *school construction* by the Global Partnership for Development (GPE Forthcoming). Figure 1 illustrates the VfM logic-chain used for the present study.

Figure A1. Value for Money (VfM) logical framework for school construction



Source: Theunynck (2020).

National resources/inputs for school construction. Figure A1 displays the list of resources available in any country for school construction. They are: (i) people, (ii) funds, (iii) commitments, (iv) institutions, (v) the construction, industry, and the national governance system. Not all countries have the same amount of each of these inputs, and must use them with maximum of economy**.** The following paragraph reviews how economically AFW countries use these resources.

People as resource for school construction. All AFW countries have abundance of people, organized into grassroots communities with capacity to carry out tasks directly related to their local development. However, AFW countries have different ways to use this abundant available resource for school construction. To tap this capacity, some governments implement CDD-type approaches, which efficiency and cost-effectiveness to reach poor people is recognized (World Bank 2004). The Mauritanian MoE was the first in Africa, starting in 1988 when the country was in post-conflict situation, and continued over the subsequent 24 years[1]. Benin started CDD in 2008[2] and Togo in 2011[3] both countries are continuing this same approach in 2021. Other countries, such as Ivory Coast (2012-2016) and Senegal (2001-2006), have positive but limited CDD experience[4]. Other AFW countries prefer to keep people and communities out of the school construction delivery process and rely on centralized administrative institutions to perform it. Nevertheless, as mentioned in earlier section, because of the limited capacity of these institutions, communities remain active, but often outside of the formal process in the absence of an organized CDD

[1] Mauritania started to use CDD approach with the IDA- financed 1988-1993 Education Sector Restructuring Project (World Bank 1993). CDD was used by subsequent projects.
[2] Benin: FTI-funded Project EFA-FTIP (2008-2012)
[3] Togo: Projects PERI I&II, 2011-2020, PAREC 2014-2018
[4] Ivory Coast: Project PAUEB (2012-2016). Senegal Project

process. Investing on school construction through CDD-type approaches is also investing on people and actually building human capital—i.e. developing **c**ommunities' and people's capacity to manage small scale school projects—and such capacity is a long-term asset that can also be used in other sectors. As illustrated in the 1988 Mauritanian example, the CDD approach works well in post-conflict situations particularly for school construction (World Bank 1996, De Regt 2013). More widely, CDD has proven highly positive to post-reweave a social-fabric broken by conflict (World Bank 2011) and is also efficient to prevent violence particularly when combined with decentralization (World Bank & UNO 2018). In AFW, Senegal is another example of a successful reweave of the social fabric in Casamance through a CDD project[5] that tapped the human capital of conflict-affected villages to build 45 local basic infrastructure (half were schools), and was awarded best-practice by JSDF (JSDF 2011).

Money as essential resource for school construction. Except for few middle-income country such as Gabon, lack of financial resource is the main constraint faced by the large majority of the AFW countries, which are over-dependent from external financial support. Economic and efficient financial management is a key ingredient for financial resource mobilization. World-wide experience shows than the multi-donor Sector-Wide Approach (SWAP) for pool-funding, developed at the end of the 1990s is a powerful mechanism to increase quantity, effectiveness and efficiency of funds. However, contrary to Asia, SWAPs are not common in Africa. They were more successful in Eastern Africa where SWAPs were able to mobilize enough funds to finance up to 30,000 classrooms programs delivered in 4 years, such as the Ugandan ESIP (1999-2004) and the Tanzanian BESSIP (2001-2005). In AFW, the Senegal's quasi-SWAP of 2000-2005, gathering 10 projects/donors under the same national Programme National de l'Éducation et de la Formation (PDEF) program, allowed for the construction of 6,000 classrooms, according to the plan (Dupety 2005). The Kenyan Education Sector Strategic Plan (ESSP) SWAP (2006-2010) allowed the construction and rehabilitation of more than 11,000 classrooms (World Bank 2011). The Burkina Faso also experienced a SWAP (PDSEB 2013-2015) (World Bank 2013). Some SWAPs were implemented in the context of budget-support, some as However, aside these exceptions, in most AFW countries, stand-alone donor-financed projects are the rule in the 2020s, with the complete series of well-known inconvenient: lack of harmonization of standard drawings and implementation processes, multiplication of management teams and reporting, high transaction costs, etc. One key element of progress for the future in AFW would be to revive the spirit of SWAP approach to consolidate multi-donor supports around a country-led school construction strategy, and fix the negative aspects.

Government's commitments as foundation resource for school construction. All 22 AFW countries have cosigned a long list of global commitments: Education For All (EFA) in 1990, Millennium Development Goals (MDGs) in 2000, Paris Declaration on Aid Effectiveness (PDAE) in 2005, Sustainable Development Goals in 2015, providing a common foundation to build the development strategies and particularly the school construction strategies. This is an important asset. All these commitments are guided by the same criteria as these of the above-mentioned VfM framework (Figure 18) for school construction: economy, equity, efficiency, cost-effectiveness and sustainability, The main question is: how much of these resources that are common to all AFW countries have been effectively transformed in actual outcomes through school construction policies and projects in the AFW countries during the subsequent years through the processes chose by each individual countries, i.e the planning processes, the norms and the implementation arrangements.

Institutions as input for school construction. Most AFW countries have participated to the Africa-wide decentralization process that started in the 1980s, and is already fully achieved in the rest of the world.

[5] The JSDF-funded "Casamance Project" (2004-2006) was implemented by PFDS (Social Development Fund Project).

The main concept underlying decentralization in to move responsibilities from the center toward lower layers that are closer to beneficiaries, and so improve service outputs (Word Bank 2004). The *subsidiarity principle* is the heart of the concept[6]. The education sector is always a core challenge in any national decentralization process, as it is the sector with a strongest network at the local level. However, in AFW, even if most countries have created Local Governments (LGs) in the 1990s-2000s, few of them have decided to devolve them the institutional/legal competency to build schools. A few countries have empowered regional entities to manage the implementation of basic facilities including schools. Paradoxically, centralized countries have created ad-hoc Social Funds institutions to delegate school construction to communities, and so harvest the benefit of the *subsidiarity principle*, but they typically have no exit-strategy from the *adhoc* Social Fund structure to a more sustainable institutional set-up such as LGs, so leaving the open the answer to the question of structural sustainability.

- Decentralized AFW countries that legally devolved school construction competency to local governments include: Senegal (1983), Benin (since 2003) and Mali since 2017 (Word Bank 2019a). Similar decentralizations are also found in ESA countries (Tanzania, Uganda);
- Decentralized AFW countries that have empowered intermediate-level institutions (above local government) to implement school construction include Senegal (Regional Development Agency since 2006), and Niger (Education Regional Directorates since 2014)
- Actually, most AFW countries, even decentralized, have not devolved school construction competency to lower levels of governments, some of them preferring to create parallel institutions, as Social Funds, to manage the construction of local basic infrastructure, including schools.

The exiting Construction Industry as a key input to scale up school construction. In the 60s, the initial situation in Africa was the absence of national construction industry and, as the result thereof, the use of international bidding by MoEs to attract foreign or large national contractors, resulting into sky-rocking unit costs of school facilities and procurement nightmares. In 70s the 'invention' of the AGETIPs successfully unlocked the African construction market by opening public procurement to small and medium contractors. Senegal was the birthplace of this 'revolution' of the construction industry management, which quickly spread AFW and SSA countries. In AFW, The Gambia, Niger, Mali, Mauritania, etc. created their own AGETIP-type Contract Management Agency (CMA) in the 70s-80s. The move was launched. A vibrant development of micro and small enterprises generated the basing asset for the development of national construction industries. As school construction programs are typically constituted of large numbers of small contracts --at the reach of small contractors—this was, then, one of the core-businesses of the AGETIP-type agencies. Since the 1980s and 1990s the network of small contractors spread over all countries and constitute in the 2010s, the main asset for the success of mass-programs of school construction. Local Competitive Bidding (LCB) is appropriate and typically generates aggressive competition wherever it is used for school construction (Senegal, Togo, Benin, etc. in AFW, as well as Uganda, Madagascar, Sudan, etc. in ESA). This leads to lower bid-prices and good quality construction The business-model promoted by the AGETIPs also provided evidence that quality of works can be achieved by small contractors when the construction industry's standard in the matter is followed -- which is outsourcing technical supervision to competent technician from the private-sector. In the 2010, the dense network of small contractors is a formidable asset to address the current challenge of scaling up school construction at affordable cost. Low- and medium-income countries (in AFW and elsewhere) should not consider this route as a specific one for them because of their current position on the

[6] The Subsidiarity Principle is a normative concept expressing the view that governance arrangements should, as much as possible, be devolved to the lowest level of management in order to get comparatively more efficient service than by higher-level, because of greater accountability (Ryan & Woods 2015)

development ladder. Actually, it is important to know that in high-income countries, small contractors constitute the vast majority of the construction industry of the 21st century (70 to 80 percent of the contractors).[7] They continue to provide evidence that they are competitive for small contracts compared to large contractors (Theunynck 2021).

Implementation of school construction

The implementation approach to build school facilities is the second cost-driver. The World Bank Report (WBR), *Making Services Work for Poor People* (2005), pointed the '*cacophony*' of approaches in service delivery. The cacophony is 'horizonal': at a given moment, different countries implement different approaches; as well as 'vertical': in given country, several approaches are implemented at different periods sometime in opposite directions, suggesting an overtime cacophony in a given country. However, the 2011 WBR recognizes that evolution is not linear and oscillations between multiple way reflects reform opportunities (World Bank 2011a). AFW countries are no exception. Thus, the result of this large array of long-past different experiences is an actual immense reservoir of information from which some knowledge and lessons for the future can be drawn. Nevertheless, harvesting form lessons learned from past requires to look back for enough time -sometimes back to the 2000s. Each single approach for school construction in a given country has a specific 'profile' different form the others, however, they all can be scrutinized through a unique simple lens, which is to '*follow the money*' -- meaning to consider the first key element to transform money into buildings, which is *procurement.* This lens allows to assess processes, outputs and outcomes of the different ways to organize procurement. Through this lens, countries' approaches for school construction can be grouped into 4 main categories:

- Centralized procurement,
- Decentralized procurement to regions,
- Decentralized procurement to local governments, and
- Direct decentralization of procurement to communities empowered by center;
- Decentralization of procurement to communities empowered by their local government.

Globally it has been established that the implementation approach is the second cost-driver for school construction after the size of the package of facilities that is the first cost driver (Theunynck).

Centralized school construction. In this category the Ministry of Education procures the works with or without the support of a Project Implemented Unit (PIU), or outsource this mandate to a Contract Management Agency (CMA), such as AGETIPs[8]. Their common feature is the practice of centralized procurement of work contracts as well as procurement of service contracts for supervision, which tend to procure to large packages of contracts, for which only large-scale national firms have the capacity to be eligible. In AFW, this approach was practiced, for example, by Senegal which has been one of the rare AFW countries with a regular annual investment budget to build about a thousand classrooms managed by the MoE's construction directorate (DCE), and which also gave birth in 1972 to the AGETIP contract management agency (CMA) that implemented school construction and also nurtured the international development of this type of CMAs in most SSA countries. Benin is another example of central implementation of school construction through this type of CMAs during the 2008-2018 period (see Box A1). The main drawbacks observed in centralized approaches are procurement bottlenecks and higher costs than decentralized approaches, i.e. lower efficiency and cost-efficiency to deliver school facilities

[7] 500,000 small construction contractors in France, 2 million in USA for instance (details and sources will be completed.

[8] Agence d'Exécution des Travaux d'Intérêt Public.

compared to decentralized approaches. In addition, although the use of PIUs or CMAs compensate for MoE's capacity-gap, it delays adequate MoE's capacity-building to manage the national school construction program, thus running counter sustainability. Centralized approaches through CMA have proven effective for urgent delivery of school facilities in post-conflict situations, such as the SVGCDP project in Central African Republic (de Regt 2015), but still delays the task of rebuilding the MoEs capacity.

Box A1. The Benin Example of centralized approach.

In Benin during the 2008–18 ten-year period, the MoE, supported by two successive FTI- and GPE-funded projects (FTIP and PPM)[9], built 2,360 classrooms through contract management delegation to two AGETIP-type CMAs (World Bank 2012, 2019b). The following illustrates the earlier-mentioned notion of 'cacophony': during the same 10-year period, the Benin's ministry of decentralization carried out two successive projects with IDA support (PNDCC and PSDCC), which built 3,900 classrooms through contract management by communities under delegation from their local government (World Bank 2012a and 2018). However, the simultaneity of the two programs provides make them fully comparable and provides evidence of the higher cost-effectiveness of the community-empowerment approach vs. the contract management agency approach: unit cost of classrooms financed by PNDCC and PSDCC were 50 percent and 40 percent lower than these of the CMAs, while standard drawings are identical and quality of works similar (World Bank 2012a and 2018a). Finally, the subsequent Education project focuses only on quality and did not include construction (World Bank 2019c), while the second phase of the PSDCC, which is an APL, is currently continuing (reference).

Decentralization to Regional level. Very few countries in the world follow this implementation scheme for primary and lower secondary school construction**.** In Africa, one example is South Africa, although SA's provinces which are responsible for school construction delivery did outsource construction management to CMAs (named Implementing Agents), with very high costs (World Bank 2021 on-going). The regional approach is typically used in high-income countries for universities**,** but generally not for primary of lower secondary schools[10]**.** In the AFW sub-region, Niger and Senegal are examples of school infrastructure delivery by intermediate levels. Niger, which is centralized country, decided in 2019 to deconcentrate the responsibility to deliver primary school construction to the MoE's Regional Directorates (DREPs) with support of the GPE-funded Education project, which builds their fiduciary capacity including procurement (World Bank 2019e). However, it is too early to assess results. In Senegal, although the country is decentralized since 1983 with a full competency transfer to local governments (communes) including school construction in 1996[11], the government decided in 2009 to recentralize school construction delivery up to the regional level in 2009 onward, with the creation of the Regional Development Agencies (ARDs) that are empowered to manage procurement of works for the LGs, including school construction (World Bank 2012c). The Senegal is an example of overtime nonlinear evolution and oscillations between opposite directions for basic infrastructure delivery. Box 2 provides historical details on these trajectories. Bottom-line, empowering intermediate levels that are not directly accountable to end-beneficiaries for basic infrastructure delivery, goes against the decentralization spirit that tend to reduce the distance

[9] Benin FTI-funded EFA-FTIP (2008-2012) and GPE-funded PPM (2014-2018).

[10] With the exception of Canada where all public schools are managed at provincial level.

[11] The 1996 Act No96-07 devolved nine competencies, including school construction to 443 LGs: 11 regional LG. 110 urban LG (Communes) and 320 rural LG (Communautés Rurales).

between the service provider and the beneficiaries of the service, according to the principle of subsidiarity and the accountability requirements.

Box A2. Senegal: Multiple parallel tracks to build schools.

Before 2009, the decentralization trajectory was moving towards empowering LGs and local communities. In 2005, the Government had already completed the 1st phase of two IDA-financed APL projects which were on parallel tracks: (i) a typical decentralization project (NRIP) and a typical CDD project (SDFP), which respectively developed rural LGs' capacity and local communities' capacity, both to manage basic local infrastructure delivery, including schools. As both projects where satisfactory (World Bank 2006c, 2007a), the Government conceived on the subsequent National Local Development Program (NLDP, 2006-2012) as the combination of the two 2nd phases of NRIP and SDFP into a single project, with the objective to deepen decentralization with the CDD dimension. This was in line with the 2004 creation of the Ministry of Decentralization and Local Development. The MoE expressed intention to use the NLDP approach for 40 percent of its investment budget (World Bank 2006). However, at NLDP mid-term, after a long period of administrative uncertainty, the government decided to radically change track and reverse direction, recentralizing basic infrastructure delivery up to the newly created Regional Development Agency (RDAs) that were given procurement responsibilities including school construction, thus reducing LGs' mandate to planning, and communities' role to non-implementation activities. In parallel, to this direction-shift by the Government, the MoE took a third track and used AGETIP to build 4,300 classrooms with support of the EFA-FTI-CF project (2009-2013)[12] (World Bank 2009), thus neglecting the decentralization approach of the Government, and illustrating the 'cacophony' between implementation modalities pointed in the 2004 World Development Report. However, the subsequent IDA-GPE-funded Education project (QIEBEP, 2013-2018) operates on the RDA's track, similar to the second phase of the NLDP (World Bank 2013a).

Decentralization to local governments. This approach is only found in countries that have effectively transferred powers to local governments (LGs) with elected legislatures—a process, named "devolution". In AFW, Senegal, Benin Mali and Senegal fall in this group. However, the process is often been gradual, and may not currently include the transfer of competency to LGs for basic school construction and limit such transfer to primary school only and not to secondary schools. This is the case of Benin, on the model of France. In AFW, Mali has been during the 2000s, the flagship country-example of the devolution of basic education to LGs, including teacher payment, school grants, and school construction planning and implementation.[13] A specific financial channel named the National Investment Agency of Territorial Authorities (ANICT) was set up to flow government's capital-funds to LGs. This implementation modality has been used by Education projects with support of most by donors. However, outputs and outcomes are disappointing: classrooms' unit cost was high and quality low (EIG 2012); disempowered Parents Associations (APEs) and school management committees (CGS) were demobilized (Traore 2014). After having followed the decentralization scheme for one decade, during the next decade the Malian MoE decided to recentralize school construction delivery, outsourcing its management to CMAs (see Box 3). During the two last decades, the Malian MoE nor LG's have built institutional capacity to deliver school

[12] Lead Donor CIDA, AFD, AfDB, Cooperation Francaise, EU, IDA, IsDB, Japan, UNICEF, USAID, WFP.

[13] Law 95-034 of January 27, 1995 on Local Government Code, followed by Decree No 02-3013 PRM of June 4, 2002 detailing the competencies devolved to LGs.

construction, while the communities' capacity has been lost. At this junction, the Malian MoE is facing again 3 possible options:

i. continue the centralized approach, thus postponing again capacity-building to deliver school construction through a sustainable arrangement;
ii. to improve the decentralized approach and fix caveats by developing appropriate LGs' and ANICT's capacity and accountability for efficient school construction delivery; or
iii. move one step further towards delegation from MoE to LGs and LGs to communities, following the Benin's model (see specific section), thus developing the 3 combined capacities: (i) MoE's capacity to plan and monitor the education system, LG's capacity to include school construction projects into their Local Development Plan, and (iii) communities' capacity to implement their school construction project.

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Box A3. Mali: the Local Government approach.

The 1995 decentralization law transferred to local governments ('*communes*') the competency to build basic schools, among other local basic facilities. This move happened it the context of a vibrant development of community schools (Écoles Communautaires) that were substantially contributing to improve access to education for children in poor communities (Marchand 2000). Actually, in 2007-08, the number of Community Schools was 3120, close to this of public schools: 3921 (MEBALN 2008). However, the 10-year MoE's education development program (PRODEC, 1998-2008) was supported by a 3-phases Education Support Investment Project (ESIP), which first phase (200-2006) was centrally implemented by the CMA AGETIP, and the subsequent two phases (2006-2012) were implemented by LGs with funds channeled through a specific national agency, ANICT. The ESIP was a kind of SWAP supported by 15 donors, with the objective build 1500 classrooms per year. Actual achievement of ESEP-I (2000-2006) was a total of 6300 classrooms in 6 years, out of which more than 2000 by local governments (ANICT) and about 1000 with IDA funds (World Bank 2007:25). The achievement of the second phase and third phases ESEP-II&III (2007-2010) was much smaller: 970 classrooms, classroom unit cost was high: US$17,500, and construction quality low—essentially because of the absence of supervision by ANICT. A review of an IDA project following this arrangement found that 23 per cent schools built by LGs was "non-acceptable" (Cipriani 2008). After the 2012 coup d'état, when support to Mali resumed, the MoE decided to move away from decentralization to LGs/ANICT funding channel and to recentralize school construction management. Under the 2013-2017 Emergency Education for All (EEFA) project, 2 contract management agencies (AGETIP and AGETIER) build 1,050 classrooms with a slightly lower classroom unit cost of 15 (World Bank 2018b).

Decentralization from MoE to communities. Direct devolution by MoEs to communities has been used by many centralized countries that want to quickly address past under-supply of basic local infrastructure to the poorest segments of their population. This movement started in the 1980s under the aegis of multisectoral ministries and took, in most countries, the organizational shape of multisectoral '*Social Funds*' implementing *Community-Driven Development* (CDD) processes. Started in Latin America, the movement further spread in the 1990s in Asia and SSA including AFW countries. Actually, the lessons learned from these experiences are evidences that demand-driven approaches and CDD implementation resulted in: (i) a majority of communities choosing school construction, (ii) communities achieve higher efficiency and better cost-effectiveness than parallel projects centrally carried out by sectoral ministries (OED 2004). Inspired by these positive outputs, several Ministries of Education decided to implement by themselves the CDD approach. In the AFW sub-region, The Mauritania's MoE was the first, in 1988, to innovate this new avenue, and continued to implement this approach during the next 24 years, up to

2012. However, despite this long-term success of the CDD approach in terms of efficacy, cost-efficiency and sustainability, the MoE turned back to a centralized approach in 2012, and experienced the poor VfM of this approach. The Mauritanian history is an exemplary case of a country taking a U-turn track, after long-term experience on the initial track. Box A4 details this storyline.

Box A4. Mauritania

The Mauritanian experience of community-empowerment for school construction is the first on record in Africa—and one of the first in the world—as well as the longest in Africa. It started with the IDA-financed 1988-1993 Education Project III, which was designed in a post-conflict period to deliver 250 classrooms in 5 years and finally timely delivered more than a thousand low-cost and good-quality classrooms through community-empowerment to procure works from local contractors (World Bank 1996). The subsequent educations projects built on this experience: the list of subsequent projects includes the 1995-2003 IDA-financed General Education V, the 2002-2010 FTI-financed APL Education Sector Development, the FTI-financed ESDP-FTI 2008-2012. They cumulatively delivered more than 8,100 classrooms in a timely and cost-efficient manner, a remarkable achievement, providing equitable access to school in is low-populated (3 million) and deserted country (World Bank 2003, 2012c; OED 2004; IEG 2012, 2013. Following these 24 years of CDD approach, the last project, the GPE-financed 2014-2018 Basic Education Support Project (BESP), focusing on small rural lower secondary schools, moved away from the approach and decided to centralize the procurement of works, because the previous approach was deemed 'technically inadequate for more complex construction of lower schools' (Word Bank 2019c: 11). Thus, the MoE (re)discovered the lower efficiency and cost-effectiveness of centralized approach: procurement bottlenecks, construction delays (requiring 19 months project extension) and high unit cost of civil works (US$200,000 for 4 classrooms, latrines, administrative block and of this approach (IEG 2019, World Bank 2019d). Looking backward, the construction package of one lower secondary school is larger but not more complex than the package of primary schools that were successfully implemented by communities during the previous 24 years. The unit cost of US$200,000 of ESSP for 4 classrooms and some additional facilities is high compared to primary classroom unit cost of about US$10,000 by communities under previous projects. This raise the question of whether the BESSIP should not have kept the CDD approach rather than centralized implementation.

The Togo's Ministry of Education also adopted the 'community empowerment approach' for school construction in 2010 on the basis that: a) prior communities high involvement in self-help school construction resulting in an increased proportion of sub-standard facilities[14]; and b) prior experiences with donor-support had evidenced the cost-effectiveness CDD approach to build standard school facilities of good quality. (UNESCO-IIPE 2014). However, with a view to not put all eggs in the same basket, the MoE split the construction component of the first IDA-financed project (2010-2015 PERI) in two sub-programs: a) a rural decentralized sub-program implemented by communities through the CDD approach and b) an urban centralized sub-program delegated by MoE to a CMA (AGETUR)[15]. This wise mixed strategy allowed the MoE to compare the two approaches. At the end of the project, the rural communities managed the construction of classroom half-price compared to the centrally CMA-managed classrooms (World Bank

[14] in Togo, the proportion of classrooms built by communities with non-durable materials increased from 33 percent to 45 percent of the total stock between 2006-07 and 2011-12.

[15] A similar implementation strategy has been used in ESA by Sudan to learn (BERP project) to learn form experience, with similar results.

2015b), and good quality of works procured by rural communities. Il also revealed the fact that large contractors and supervision firms procured by the CMA for the urban sub-program delivered a poor quality construction. So far, the decentralization by MoE to communities has been continued by the Togolese MoE for more than 10 years. Box 4 provides details on the Togo-specific story.

The same approach has also been implemented in the AFW sub-region by Ivory-Coast in 2012-2018 (GPE-financed Emergency Basic Education project—PAUEB-EBEP) and in the ESA sub-region by Sudan (2013-2018 BERP project), Madagascar (2008-2011 FTI project, 2013-2017 IDA-financed PAUET project and 2018-2022 PAEB project). All these projects have provided consistent evidences that local communities managing their own school construction sub-project outperform central MoE's offices and CMAs centrally managing school construction programs, in term of efficacy and cost-effectiveness. The post-evaluations also provide factual evidences that quality works is at least equivalent if not better when communities outsource construction supervision to qualified technician.

Box A5. Togo

In 2010, the Togolese MoE launched the FTI-financed '*Education and Institutional Strengthening Project (PERI)*', with the objective to build 600 rural classrooms through communities (COGEPs) –i.e. CDD approach-- and 200 urban classrooms through a Contract Management Agency: AGETUR (World Bank 2010). The project was successful as regards the rural CDD part which was substantially cost-effective (half unit-cost US$ 110/m^2 vs US$216/$m^2$) than the centralized urban part and more efficient in terms of time delivery (World Bank 2014b, 2015b), In addition, the centralized urban sub-program ran into serious technical problems due to the poor performance of large contractors (using undersized iron bars into reinforced concrete and ill-locating rain-water-pipes, thus jeopardizing structural solidity), while supervision by large engineering firms was poor (Theunynck 2013, World Bank 2015b). The following projects, discontinued the use of CMA and focused on the CDD approach: the 2015-2019 GEP-financed PERI-II (World Bank 2015c) the 2014-2018 AFD-financed PAREC-II (France), leading to similar results as regards cost-effectiveness of the CDD approach (World Bank 2020, IEG 2021).

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