Overview Note

EDUCATION IN SUDAN: CHALLENGES AND OPPORTUNITIES

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Acknowledgements

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The overview note is a summary of a series of policy notes developed following discussions at the Sudan International Education Conference on education reform held in Khartoum in January 2020 and co-organized by the Government of Sudan, World Bank, UNICEF, and the European Union, as well as subsequent meetings and consultations with the Government of Sudan at the federal and state levels, development partners, and other stakeholders in Sudan. The World Bank team is grateful for all the support it has received during this process and extends its appreciation to H.E. Mohamed El Amin El Tom, former Minister of Education, and H.E. Tamador Eltrifi Awad Elkrim, Acting Minister and Undersecretary for the Federal Ministry of Education, for their guidance and close collaboration on this work.

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1. Introduction

Sudan's education sector faces new opportunities and immense challenges as the country seeks to move toward a new era of democracy and economic development. The change of government occurred in 2019 largely through the efforts of Sudan's youth, and its success will also depend heavily on youth, who represent a majority of the population. Learning outcomes are low and access to education is highly uneven across the 18 states, but forward-looking, evidence-based policies coupled with adequate financing can improve access, quality and equity in education, and help create the Sudan of the future. Already, the government has begun to focus much-needed efforts on the reform of the education sector whose underperformance has constrained economic growth and development. It has increased teacher salaries and overall sectoral funding recently; it has reconfigured the structure of primary and secondary schooling to increase access to primary and secondary education; it has moved rapidly to establish mechanisms to ensure access to learning throughout the COVID-19 pandemic; and it has signaled a determination to implement fundamental changes in policy to address inequities in access and quality.

In support of the government's education reform efforts, a series of policy notes were prepared in 2020 and 2021, exploring key thematic areas identified at the Sudan International Education Conference held in Khartoum in January 2020,[1] reflecting key elements of the government's education reform agenda. They include (1) education financing; (2) curriculum and learning assessment; (3) teachers and school leadership; (4) school construction; (5) information and communication technologies (ICT) in education; (6) institutional reforms to the Federal Ministry of Education (MOE); (7) girls' education; (8) early childhood education and preprimary learning[2]; and (9) higher education (see annex 1 for the full names of the policy notes). An initial policy dialogue around these issues was held at the education conference, which brought together international experts and education stakeholders from the federal and state levels, nongovernmental organizations (NGOs), and Development Partners. The policy notes were then prepared based on interviews conducted by phone and through email exchanges that provided a wealth of information not previously available. The analyses also benefited from in-depth desk reviews of available documentation.[3] Following completion of the draft policy notes, virtual consultation workshops with the federal and state Ministries of Education (MOEs), and Ministry of Higher Education and other stakeholders were held to agree on the challenges and recommendations. An additional policy note was prepared on developing a resilient education system to ensure continued learning in the COVID-19 pandemic context and other emergency situations.

The objective of this overview is to provide education decision-makers and practitioners at all levels of the education system in Sudan with a clear summary of the policy options and strategic priorities that were developed in the policy notes. The overview also seeks to identify possible entry points for reforms that would provide momentum and visibility around education, recognizing that a well-functioning education system can support Sudan's re-emergence as a vibrant economy and a contributor to regional and global stability and peace. Unless otherwise indicated, information presented in this overview is drawn from these individual policy notes.

The analysis of challenges and the recommendations provided in this overview are targeted to all levels of Sudan's education system: the central ministry, state ministries, localities and school levels. Effective governance mechanisms will improve cooperation between different levels of government; better coordination and consolidation of dispersed efforts can translate into economies of scale and hence more effective use of public resources. This in turn will deliver better education services and support a good standard of teaching and learning in schools through the work of

1. The Sudan International Education Conference in Khartoum in January 2020 was co-organized by the Federal Ministry of Education, the World Bank, UNICEF, and European Union. A fuller treatment of the issues discussed in this overview can be found in the individual policy notes which will be annexed electronically to this document (see annex 1 for the complete list of policy notes).
2. The policy note "Early Learning and Pre-Primary Education in Sudan" was prepared by UNICEF which was a partner of the World Bank in the organization of the Sudan International Education Conference in Khartoum in January 2020 (Ewertson and Craig 2020).
3. Field visits were not possible during preparation of the policy notes due to the COVID-19 pandemic, other than in the Khartoum region. A further limitation is that population projections used for many indicators date from 2008 and must be considered indicative at best in regions with high population mobility such as the Darfur states.

well-motivated school directors and teachers with the right skills and adequate resources.

The circumstances under which this study was prepared resulted in limitations to the analysis of the various themes. The policy notes were prepared during the COVID-19 pandemic; travel restrictions related to the pandemic limited consultations with stakeholders. Existing gaps or inconsistencies in data also restricted the scope of analysis under each of the thematic areas. Section 4 provides more detail on the limitations of the study and proposes areas for future research.

2. Education Sector Challenges

2.1 Background

Sudan has a long history of education, with the sector experiencing several major changes since the country's independence in 1956 (annex 2). The current education structure consists of two years of preschool, eight years of primary education, and three years of secondary education. Starting from 2021/22 school year, the duration of primary education will be six years, followed by three years of lower secondary education and three years of upper secondary education. Secondary education can be academic or technical. Education is decentralized, and subnational levels of government have the primary responsibility for the delivery of education services, from preschool to secondary education. There were about 7.3 million children enrolled in basic and secondary education in Sudan in the 2018/19 school year before the COVID-19 pandemic, with almost 25,000 public and private schools, and approximately 295,000 teachers in the education system.[4]

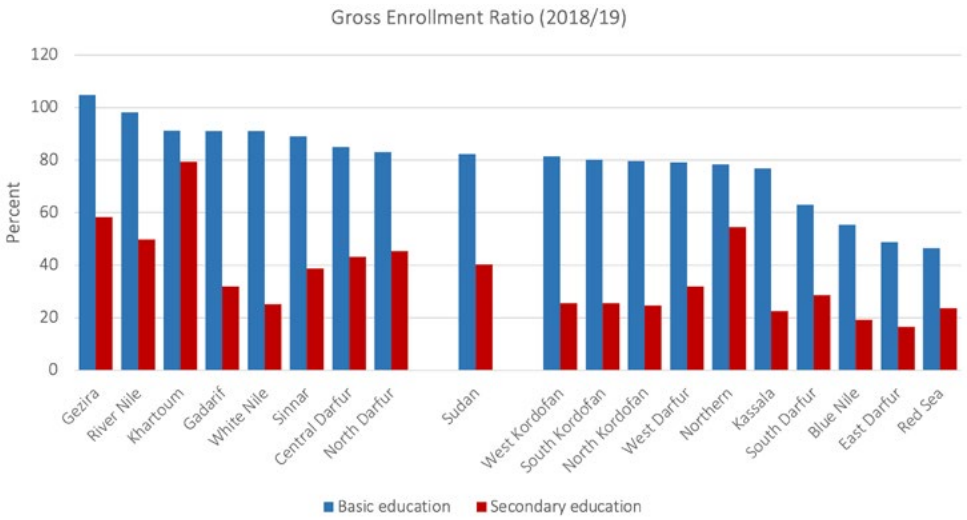
Over the last decade, there have been positive trends in key education indicators. Access has improved, with nearly 1.7 million additional children enrolled in basic and secondary education prior to the COVID-19 pandemic, an increase of over 30 percent since 2008/09.[5] The number of students completing basic education and proceeding to secondary school increased from 251,000 to 336,000.[6] Despite these improvements, however, many significant challenges remain.

Providing access to education for all is an unfinished agenda. The gross enrollment ratio (GER) was 82 percent at the basic education level and 40 percent at the secondary level for the 2018/19 school year.[7] The disparity in GERs is significant; less populated and mostly rural states have a smaller share of children attending school (figure 1). About 24 percent of primary school-age children and 72 percent of secondary school-age children are estimated to be out of school.[8] This affects mostly children from poor households, and girls in rural areas.[9] Out-of-school rates for primary and secondary education are slightly higher for girls than for boys; about 55 percent of women with no education in Sudan were married by the age of 18, compared to only 3 percent of those with higher education.[10]

Poverty is the most significant predictor of whether a child is out of school. Sudan has one of the highest rates of out-of-school children in the world, with over 3 million children without access to school. Poverty is the most significant predictor of whether a child is out of school. Figure 2 shows that as the poverty rate increases, the basic education enrollment rate declines across states. Overall, poverty is greatest in more rural settings, though there is a high degree of poverty in urban areas as well. The negative relationship between poverty and GERs characterizes the enrollment of boys as well as that of girls, although it appears strongest for girls. Only 28 percent of rural girls from poor families complete basic education compared to 95 percent of urban boys from well-to-do families.[11] Enrollment of girls, especially in rural areas, is also impacted by the distance to schools, safety concerns when commuting to and from school, traditional sociocultural practices such as early marriage and female genital mutilation that are more prevalent in rural areas, and conventional gender roles that cause families to confine girls to domestic duties instead of sending them to school.

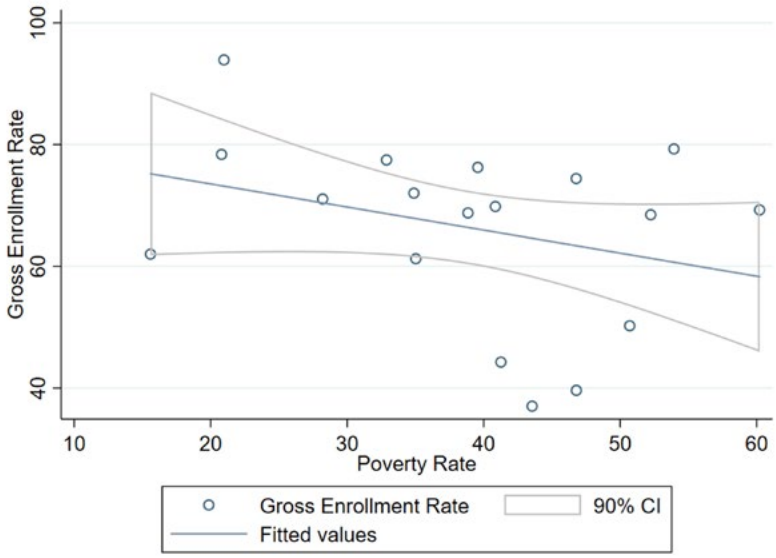
4. Sudan Federal Ministry of Education (FMOE) Annual School Census 2018/19.
5. Author estimates using data from Sudan's FMOE Annual School Census 2018/19 and Sudan Education Sector Analysis 2018.
6. Author estimates, using data from Sudan's FMOE Annual School Census, 2018/19.
7. Author estimates, using data based on Annual School Census, 2018/19 and GOS Population Projection.
8. See https://www.unicef.org/sudan/education/.
9.National Household Budget and Poverty Survey (NHBPS) 2014/15,
10. See https://www.girlsnotbrides.org/child-marriage/sudan/.
11. Multiple Indicator Cluster Survey, Sudan 2014

FIG. 1 Disparity in Enrollment Rates Across States in Basic and Secondary Education



Source: Author estimates, using data based on Sudan's FMOE Annual School Census, 2018/19 and GOS Population Projection.

FIG. 2 Gross Enrollment Rate in Basic Education by State vs Poverty Head Count

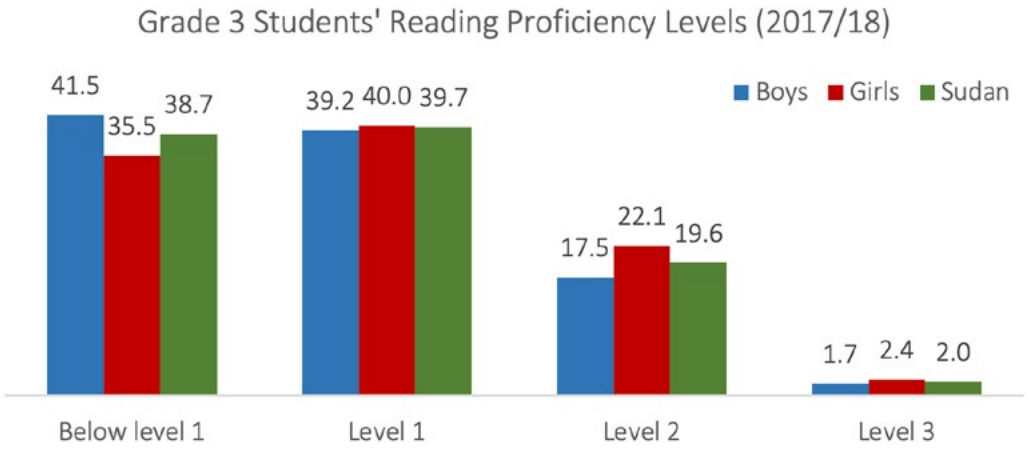


Source: Rapid survey school year, 2018/19.
Note: A fit line is included in the graph showing the linear relation between Gross Enrollment and Poverty Rate. The confidence interval bands illustrate the range in which it is expected, with 90 percent confidence, that observations lie within such linear relation

Learning outcomes are poor, and many Sudanese children lack basic foundational skills in literacy and numeracy. The 2018 National Learning Assessment (NLA) showed that performance of grade 3 students was low in all domains of the assessment (reading, writing, and numeracy). Only 2 percent of students at this level were able to read fluently (more than 60 words per minute) in Arabic, and 39 percent were not able to read at all (figure 3). Only 15 percent of 8 to 9-year-old children can read at the minimum international benchmark. Fewer than half of the children at this age can perform basic mathematical operations (GPE 2019).

Within the higher education sub-sector, progress has been limited. There has been a moderate increase in GER from 12.2 percent in 2005 to 16.9 percent in 2015, however, this expansion has placed stress on educational institutions and impacted the quality, governance and relevance of education.[14] There is inadequate financing for the subsector and an unequal distribution of available resources among education institutions. The mismatch between education and skills provided by tertiary education institutions and the demand for skills from the local labor market contributes to high unemployment rates among graduates and consequently

FIG. 3 Poor Performance in Reading Proficiency Among Grade 3 Students[12]



Source: National Learning Assessment (2018).

Weaknesses in the education sector account for much of Sudan's low ranking on the Human Capital Index (HCI). First launched in 2018, the HCI measures the amount of human capital that a child born today can expect to attain by age 18.[13] According to the 2020 HCI update, Sudan's HCI score remains at 0.38, indicating that the future earnings potential of a child born today is only 38 percent of what it could have been with complete education and full health. Poor student learning outcomes and low access to education contribute to the low HCI value for Sudan. Although a Sudanese child can expect to complete 7.1 years of schooling by age 18, her education is the equivalent of 4.3 years when adjusted for quality of learning.

brain drain. There are a limited number of graduates in science fields: in 2012, about 84 percent of bachelor's degree graduates were in education, humanities and social sciences fields.

The COVID-19 pandemic can be expected to impact the education sector for many years to come. Sudan responded quickly to the COVID-19 pandemic by closing its borders and imposing a full lockdown on Khartoum state. Education radio and television were utilized to provide a minimal level of structured learning for students, but many students were excluded, and teachers had almost no role in supporting online or broadcast approaches, as compared to about one-third of

12. The levels of the National Learning Assessment are defined as follows: below level 1 means a student is unable to read; level 1 means a student can read 1–30 words per minute; level 2 means a student can read 31–60 words per minute; level 3 means a student can read over 60 words per minute or fluently.
13. The index ranges between 0 and 1. A country in which a child born today can expect to achieve full health (no stunting and 100 percent survival to adulthood) and full education potential (14 years of high-quality school by age 18) would score a value of 1. For more information on the World Bank's Human Capital Index, see https://openknowledge.worldbank.org/handle/10986/34432.
14. UNESCO Institute of Statistics data (2005 and 2015).

Sub-Saharan African countries where efforts were made to help teachers connect with students during closures).[15] The continued impact of the pandemic will create budget constraints affecting the economy (and the education budget) for years to come. It will also result in significant loss of learning for the current cohort of students.

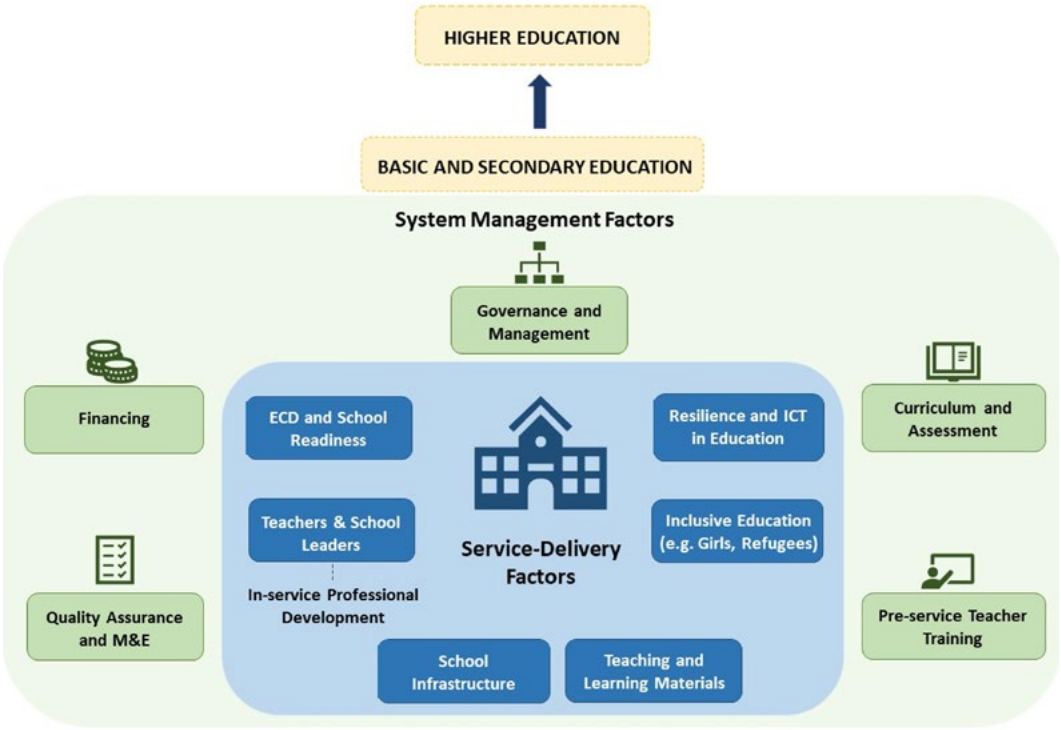
2.2 System Management Challenges

This section presents challenges affecting schooling and learning which can be addressed by strengthening education system management.[16] It focuses on factors addressed in the policy notes that form the basis of this document. At the basic and secondary education level, education system management factors include governance and management, financing, curriculum and assessment, preservice teacher training, quality assurance, and monitoring and evaluation (M&E). Governance, financing and quality assurance are also addressed for the higher education level along with additional factors such as university-industry links and research and technology transfer (figure 4).

2.2.1 Education governance and management

Management challenges in Sudan span three levels of the system: the central ministries, the state, and the locality. The federal level is responsible for planning, setting policy, and the general oversight, coordination, and monitoring of the sector. This includes the development and maintenance of standards and the development of policy in three key areas: (a) secondary school certification; (b) the qualification framework for teachers; and (c) development of curricula for basic and secondary education through the National Center for Curriculum and Education Research (NCCER). The states are responsible for the delivery of secondary education, human resource management, coordination among Directorates of Education at the locality level, and certification of students in basic education. Localities are responsible for delivering basic education. At all levels, budgets for travel and supervision are extremely limited. Table 1 summarizes the roles and responsibilities of the three tiers of government.

FIG. 4 System Management and Service-Delivery Factors



Source: Authors' own elaboration.

15. See https://www.brookings.edu/research/school-closures-government-responses-and-learning-inequality-around-the-world-during-covid-19/.
16. See figure 3 for a presentation of how system management factors interact with service delivery factors within the education system.

TAB. 1 Education Roles and Responsibilities of National and Subnational Governments

Function	Federal Government	State Government	Localities
Policy	Sets standards, norms, and policies such as curriculum standards, teacher qualification framework and secondary school certification.	Implements policies and regulations.	Implement policies and regulations.
Financing	Responsible through the Federal Ministry of Finance for making federal transfers to states, which are the most important source of funding for education service delivery. Responsible through the Federal Ministry of Finance for making direct transfers of grants to higher education institutions. Manages the budgets of the Federal MOE and the Federal Ministry of Higher Education.	Responsible for funding secondary education.	Responsible for funding basic education.
Curriculum	Supervises the NCCER, a semi-autonomous agency that is responsible for developing and supporting the national curriculum framework for basic and secondary education.	Responsible for setting the preschool curriculum through state MOEs.	Implement preschool and basic education curriculum.
Facilities and Infrastructure	Sets policies and establishes frameworks such as the National School Construction Strategy, which includes norms, standards, technical specifications, bills of quantities (BOQ), and local competitive bidding (LCB) documents.	Responsible for the construction of secondary schools. *In practice, about 80 percent of schools are constructed by local communities.*	Responsible for the construction of preschool and basic education schools. *In practice, about 80 percent of schools are constructed by local communities.*
Teachers and education staff	Responsible through the National Center for Teacher Training for the one-year accreditation process for basic education teachers.	Responsible through state MOEs and state Ministries of Finance (MOFs) for the recruitment and transfer of teachers for secondary education. *Although localities are in theory responsible for the recruitment and transfer of teachers for basic education level, the reality is that most states carry out this role, especially when localities have limited capacity.*	Responsible for the recruitment and transfer of teachers for basic education level. *In practice, this can be done either by the state or the local government depending on the capacity of the local government as well as the state's willingness to devolve responsibility to the locality (see state level).*

TAB. 1 Education Roles and Responsibilities of National and Subnational Governments (*CONT.*)

Function	Federal Government	State Government	Localities
			Volunteer teachers are hired directly by the schools and constitute 10 percent of total teachers in basic education and 6 percent in secondary education.
Quality assurance	Responsible through the Directorate of Quality Assurance General Education for setting inspection framework and policies.	Secondary school teachers are supervised by state inspectors. *In practice, basic and secondary school teachers are supervised by either state, local, or head teachers or a combination of all of these depending on capacity (see locality level).*	Basic education teachers are supervised by local inspectors. *In practice, state inspectors may also carry out inspections in basic education schools.* *Head teachers also carry out supervision of teachers.*

Source: Authors' own elaboration.

Under Sudan's decentralized system, many key functions and responsibilities, both administrative and fiscal, fall under the mandate of the states. Teacher management is one such example. The recruitment and transfer of teachers in secondary education is the responsibility of the state government. At the basic education level, this is technically the responsibility of the localities although the state government may step in depending on the capacity of the local government and the degree of autonomy granted to localities in each state. The recruitment of volunteer teachers is the responsibility of school education councils, which are school-based management committees consisting of parents, teachers and members of the community. The costs of volunteer teachers are covered by contributions from parent-teacher associations (PTAs).

The stewardship role of the federal MOE, including development of curriculum, overall strategy, policy, coordination and oversight, is impeded by a lack of performance management structures and capacity. There is a significant disparity in resources and outcomes across states, but the federal MOE does not have the authority or management tools to ensure quality and equity through proactive support, supervision, and auditing of state and locality operations. This limits compliance with plans, policies and standards.

The federal MOE provides little oversight and lacks the necessary resources and mechanisms to ensure accountability for results. Day-to-day implementation and service delivery are the responsibility of the states, with the federal MOE tasked with providing support and quality control for state and locality operations. However, insufficient availability of data for budget analysis, a lack of clear accountability mechanisms between the federal level and state ministries of education around the transfer of budgetary resources to the state level, and a lack of dedicated budget prevent the federal MOE from carrying out its oversight function adequately. Most federal decrees and requests are instead directed through the Ministry of Government Affairs.

The organizational structure of the MOE further hinders its efficiency and effectiveness in carrying out its mandated duties. There are several semi-autonomous agencies which operate independently from the federal MOE and which duplicate some existing functions at the federal ministry. Some directorates appear to be redundant.

2.2.2 Financing of education

Overall public spending on education has been low, both as a share of total budget spending (9.0 percent in 2018) and as a share of GDP (1.3 percent in 2018). The Education 2030 Framework for Action called for nations to allocate between 4 percent and 6 percent of GDP and at least 15 percent to 20 percent of total public expenditure to education. While spending on education has not yet been seen as a national priority, it is a shared responsibility of all tiers of government to ensure Sudan can meet its goals of improving the quality of education, reducing the high number of out-of-school children and eliminating regional disparities.

Data collection, reporting and monitoring mechanisms, especially for subnational public spending on education, need to be strengthened for greater transparency and better planning. The current reporting mechanisms, which remain largely paper-based at the locality and state level, are geared primarily toward producing aggregate budget tables to feed into the preparation of the consolidated budget at the federal level. This is a fundamental barrier for education public expenditure analysis and evidence-based planning.

The low predictability of transfers from the federal level as well as a lack of transparency in the criteria used for determining the allocations create challenges for proper planning. Most subnational spending on education depends on transfers from the federal level, especially for states with poor internal revenue mobilization capacity. For most states, these transfers represent the largest source of their total revenues. However, the unpredictability of actual federal transfers creates uncertainty, with about half of the states receiving 60 percent or less of budgeted transfers. These discrepancies and the lack of transparency have been barriers to adequately finance education.

Parents pay a high share of costs due to inadequate school-level financing and ineffective management (World Bank 2018). Sudan has implemented a school-based management program using school grants with the support of the World Bank since 2015. The school grant program in Sudan was designed to be part of a decentralization reform in the education sector, and has helped to improve coordination, organization and supervision among parents, teachers and headteachers. However, adequate school-level financing is not available for most schools.

2.2.3 Curriculum and assessment

The curriculum in Sudan is overloaded with content and lacks a systematic progression in terms of cognitive development. The written curriculum is normally a key mechanism for ensuring appropriate standards and approaches to teaching and learning. However, the Sudanese curriculum has not had a major review for three decades and has become outdated. It is not guided by a clear presentation of learning targets. A modern curriculum would include a systematic and progressive development of skills across the years and across subjects, and a stronger focus on the development of socio-emotional skills.

Learning assessments have improved recently, with two rounds of the National Learning Assessment (NLA) carried out in the past seven years. The NLA is a sample-based student assessment of reading and mathematical proficiencies representative at the national level and for all 18 states of Sudan. It is an adaptation of the Early Grade Reading Assessment (EGRA) and Early Grade Mathematics Assessment (EGMA). A sample of 9,185 grade 3 students from 439 schools were surveyed in 2015. In 2018, the sample included 15,252 grade 3 students, and 15,728 grade 6 students from 741 schools across all 18 states. These assessments have improved to the point where they are able to make an important contribution to policy making although there is still the need for a clear assessment strategy, which should be prepared in consultation with key educational stakeholders. The existing data show a persistent disadvantage for the large numbers of overage students in the education system, and for children living in rural areas. On average, boys perform slightly better than girls in mathematics and girls perform slightly better in reading, but all students are performing far below regional and international comparators. The uneven availability of qualified teachers contributes to significant variations in student learning outcomes across states.

2.2.4 Preservice teacher training

Sudan has a preservice teacher training structure that presents both advantages and disadvantages regarding the supply of teachers. It is decentralized and geographically diverse, with a significant presence in all regions of the country. Its many education faculties produce enough graduates each year to respond to immediate recruitment needs and to maintain, in theory at least, the pupil-teacher ratio at acceptable

levels. However, it has been unable to attract students with a strong academic background. Further, there is no agreed standard across the faculties of education in terms of the preservice curriculum, and programs vary considerably in terms of quality and content. None of them place sufficient emphasis on classroom-based experience, leaving them all with a strong tendency to emphasize theory over practice.

There is an insufficient supply of teachers with appropriate skills and competencies. Teachers run the gamut, from those who have full qualifications and demonstrate strong classroom performance to those who themselves have a limited education and may be hired by local parent groups when no civil service teacher is provided. About 13 percent of basic education teachers and 11 percent of secondary education teachers in government schools are parent-hired or 'volunteer' teachers. A 2019 survey found that few teachers have sufficient content knowledge and skills to deliver a high-quality primary education.

School directors receive little training and virtually no guidance for instructional leadership. It is difficult for any professional to maintain standards without supervision. School leaders are particularly isolated, especially in remote schools. While this could be addressed in part through parent-teacher associations, the power of such associations is limited, and they often have difficulty in dealing with underperformance by school leaders. A lack of budget and management capacity means that school leaders do not currently receive regular supervision visits from regional offices and, in general, receive very little feedback or guidance to improve their performance.

2.2.5 Quality Assurance and Monitoring and Evaluation

Quality assurance is characterized by overlapping responsibilities and hit-or-miss application. Basic education teachers are, in theory, supervised by local inspectors. In practice, this function may also be carried out by state inspectors or, in certain cases, by head teachers. Similarly, at the secondary level, teacher may be supervised by state or local inspectors or school directors. Budget constraints mean that many teachers and school leaders receive no supervision at all. There is little systematic monitoring and evaluation of system-wide trends and overall performance.

2.2.6 Higher Education

Sudan's tertiary enrollment ratio of 17 percent is higher than that of most Sub-Saharan African countries.[17] The country has a generally good gender balance in access to higher education, although this varies by faculty. Of greater concern is that the higher education system displays acute geographic inequalities in terms of access and quality.

All public higher education institutions are underfinanced. Public spending for higher education represents only 0.2 percent of GDP, which is well below the average in Sub-Saharan Africa (0.8 percent). Staff salaries are very low, resulting in large numbers of professors taking on private work to supplement their income. Financial support to higher education institutions is provided by the federal government in the form of annual grants, but these are not related to actual funding needs or institutional performance.

Sudanese universities face many governance challenges. The higher education system was heavily politicized under the previous regime and quality assurance mechanisms are weak. There are few links across the individual universities within the system. Since 2019, the government has been working on establishing an adequate governance framework and proposing new rules to define how the sector is guided, supervised and managed in a transparent manner.

Pedagogical practices in higher education are not aligned to market demand. The student-to academic staff ratio is high (50 to 1) and the availability of qualified staff has decreased because of brain drain. Programs tend to focus on theoretical knowledge with very limited attention to practical training. Colleges and universities have few links with employers. ICT infrastructure at most universities is weak and digital skills are significantly lacking.

Sudan lacks a national scientific research and innovation strategy to guide the efforts of the universities. Sudanese universities have a considerable distance to go in building their institutional capacity for scientific research. The high student-to-teacher ratio and the low proportion of academics with a PhD translate into high teaching loads, little time for research, and poor supervision of graduate students. The limited availability and

17. UNESCO Institute of Statistics data (2015).

low quality of existing research facilities and equipment also hinder research and technology transfer.

2.3 Service Delivery Challenges

This section presents challenges affecting schooling and learning which can be addressed by strengthening service delivery. Service delivery factors include in-service professional development for teachers and school leaders, the availability of teaching and learning materials like textbooks and teacher guides, school infrastructure, provision of early childhood development, support for inclusive education such as girls' education, support services in schools, and the development of resilient systems and programs, including through the improved use of ICT.

2.3.1 Teachers and school leaders

Teacher management challenges occur at all three levels of the system. Budgets for travel and supervision are limited. At the central ministry level, there are no clear guidelines in terms of the competencies that teacher candidates are expected to demonstrate. At the state level, financing is insufficient, capacity is weak, and infrastructure is in poor repair. The supervision function, which is largely managed at the locality level, is severely hampered by a lack of budgeting, and most school directors have little capacity for instructional leadership.

Teacher deployment challenges are linked both to the availability of qualified teachers and their distribution across and within states. There are enough teachers in Sudan to allow for acceptable pupil-teacher ratios and good learning in all schools, but the distribution of these teachers across schools is uneven, and pupil-teacher ratios vary widely across states. Specialized teachers for grades 4–8 are often not available, particularly in more isolated regions. The recruitment of teachers is not transparent, with processes that vary widely across and within states.

Female teachers are unevenly distributed across the states, with significant variation in their level of qualifications. Rural and remote areas have a severe shortage of female teachers, a problem that calls for better planning and an improved teacher deployment strategy. There are few existing policies or incentives to attract more female candidates to rural and remote areas, and few pathways for the many volunteer teachers in poor and rural communities to become qualified.

The need for in-service teacher professional development is acute, but budgets are almost nonexistent. Sudan's education system has a significant number of unqualified 'volunteer' teachers, and underqualified government teachers, with differing needs for in-service support. There is no mentoring program for first-year teachers, and there are few resources available to support continuous professional development. This problem is exacerbated by Sudan's use of specialized teachers beginning in grade 4, and the consequent need to ensure appropriate subject-specific training.

Teaching methodologies are traditional and teacher-centric. There is an emphasis on following the textbooks and rote learning, with limited classroom interaction and engagement of students. Although teacher guides have been developed, many teachers do not use them.

Teacher-led assessments of learning are weak and provide little useful feedback to teachers or students. Teachers lack the expertise to assess their students' learning, and to adapt teaching and learning in response. The Systems Approach for Better Education Results (SABER) Student Assessment (2011) collected detailed information on assessment practices. The study found that although textbooks and workbooks contain assessment activities, most of these rely on recalling information rather than the application of knowledge. Teachers mostly use multiple-choice questions and do not use explicit criteria for the scoring of learners' work. Further, teachers do not use assessment results in a formative way, i.e., to promote and inform student learning. In addition, there are limited systematic mechanisms set in place to monitor the quality of classroom assessment practices and provide feedback to teachers.

2.3.2 Teaching and learning materials

Textbooks are not available to all students; they are content-heavy and do not encourage higher-order thinking or active and inquiry-based learning. Recent surveys show a shortage of books in classrooms. At the basic education level, two students share a mathematics textbook, three students share an Arabic textbook, and four students share a science textbook. On average, two students share a textbook for mathematics and English across all three secondary grades. Teacher guides are insufficient in number, and do not provide concrete guidance to teachers for the implementation of the curriculum.

The low quality of textbooks and teacher guides presents a further challenge. The learning units are not structured in a clear and balanced manner, and the quality of the graphics, illustration, layout, and design is low. Teacher guides do not provide concrete and specific guidance for the implementation of the curriculum, nor are they being used effectively by teachers. They provide general guidance instead of detailed and practical ways on how to implement these different techniques in each lesson. Further, teachers report expectations that they will cover all curriculum content in the overloaded textbooks, leaving insufficient time to ensure understanding or acquisition of relevant skills on the part of their students.

2.3.3 School infrastructure

Sudan has a severe shortage of classrooms, contributing to the highest rate of out-of-school children (OOSC) in Sub-Saharan Africa. There are 16,800 open-air classrooms, and another 37,000 classrooms that require substantial rehabilitation.[18] The MOE has restructured the education system to a 6-3-3 structure starting from the 2021/22 school year, and this may result in a need to construct up to 20,400 additional classrooms. This means that at least 7,000 new classrooms would need to be built each year during the coming decade to close the current backlog of open-air and nonpermanent classrooms, even without changing other educational parameters, to cope with the projected school-age population increase. In addition, about 50 percent of public basic schools lack access to safe water, and 35 percent lack basic sanitation. There are also significant imbalances across states, which range from a low of 10 classrooms to a high of 37 classrooms per 1,000 school-age children. School infrastructure also has a significant impact on Sudan's ability to provide needed support services (see below), such as school feeding programs which can improve the ability to learn of large numbers of children. It can also encourage inclusive education, which is best understood as providing learning opportunities for all children based on individual needs; however, inclusive education requires accessible infrastructure as well as opportunities for more flexible ways of organizing classrooms and learning opportunities.

2.3.4 Early Childhood Education and school readiness

In Sudan, there is limited access to early childhood education (ECE) or preprimary education, and the quality of services is low. OOSC data suggest that about 40 percent of five-year-old children attend preprimary education.[19] There is little information about access for the most vulnerable children, but since most preprimary education is organized in urban centers, it can be inferred that the children who would most benefit from preprimary education are the least likely to have access to it. While there is no apparent gender disparity, there are large differences of access based on household wealth, place of residence (rural versus urban) and region, with preprimary out-of-school rates ranging from only 26 percent in Gezira to 91 percent in South Darfur.

2.3.5 Inclusive education

Every child has the right to quality education. Sustainable Development Goal 4 on education emphasizes inclusion and equity as laying the foundations for quality education.[20] Reaching excluded and marginalized groups and providing them with quality education is important for Sudan's social and economic development. These groups include girls, children with disabilities, and refugee children.

Girls in Sudan continue to face a range of cultural and socioeconomic barriers that prevent their full participation in schooling. Compared to boys, they have more limited initial access to education, particularly in rural regions, and are less likely to complete a full program of studies. While they outperform boys in reading, they show persistently lower scores in mathematics. There are large gaps among states in girls' access, retention and completion. They have also been disproportionately affected by the COVID-19 pandemic.

Sudan has very limited capacity to provide support services for children with disabilities or children suffering from nutrition deficiencies. In 2010, 45 percent of boys ages 6–9 with disabilities were out of school compared to 55 percent of girls with disabilities of the same age (UNICEF 2014). For those children who were in school, there was little capacity for addressing

18. FMOE Rapid Survey 2015–2019, cited in "Construction of Basic Education Schools in Sudan Policy Note".
19. Data in this paragraph are taken from the 2016/17 Ministry of Education's EMIS, cited in Ewertson and Craig (2020).
20. See more information on Sustainable Development Goal 4 in the following link: https://sdgs.un.org/goals/goal4.

their specific learning needs or for providing access to specialized services as needed. Some access to school feeding has been provided by the World Food Program (WFP), although this was disrupted by the school closings of the past year. WFP reached about 1.1 million schoolchildren with take-home meals during the period of school closures. Overall, food insecurity is estimated to affect almost one-fourth of the Sudanese population.

Sudan faces significant challenges in providing education to refugee children. It has received and welcomed refugees from neighboring countries since the 1960s. As of July 31, 2019, there were 251,379 refugees and asylum seekers in Sudan from Ethiopia, Eritrea, Yemen, Syria, Chad and others. The recent conflicts in Ethiopia have created a new influx of refugees to Sudan. Currently, only a small proportion of refugee children are enrolled in schools. The main challenges to provide schooling to refugee children include the lack of schools in host communities, lack of basic school resources and facilities, and the lack of teachers (FMOE, IGAD and UNHCR 2020). In addition, timely and reliable data to monitor the access and quality of schooling for both refugee children and children in the host community are very much needed.

2.3.6 Resilience and ICT in education

Digital literacy is low among teachers, education officials and students, and access to quality internet connectivity in schools is rare. As a result, experience and capacity in planning for and implementing ICTs at the system, school and classroom levels are low. Gaps in reliable, comprehensive, up-to-date information and data about the availability and use of ICT inhibit the development of viable, relevant, evidence-based educational technologies policies in Sudan.

The ongoing COVID-19 pandemic has underscored the fragility of education systems around the world, and their vulnerability to external shocks. In recent years, schooling in Sudan has also been disrupted by conflict, political turmoil and flooding. As noted above, the negative impacts of these external shocks are often greatest for girls' access to school and for their learning outcomes. To build a more resilient education system going forward, specific strategies will be needed that focus on alternative methods of delivery during school closures, safe reopening of schools following disruptions, accelerated programs to help children make up for lost learning, and ongoing emergency readiness preparation (see Policy Note on Building a Resilient Education System in Sudan).

3. Opportunities and Recommendations

The education sector in Sudan, as noted above, faces multiple complex and inter-related challenges but also has clear opportunities for change. Education reforms must address binding constraints and challenges, but they must also identify existing strengths that present opportunities or entry points for reform. Several features of the Sudanese education system provide such opportunities. For instance, while the decentralized structure of the Sudanese system leads to some overlapping responsibilities between the federal and state ministries, it presents a clear opportunity to address context-specific challenges that vary widely across the country. Existing management structures such as the inspectorate system could be revitalized and supported to address disparities in access and learning outcomes across states. The existence of a national assessment tool for measuring student learning outcomes provides an opportunity to give teachers and planners up-to-date information about student learning needs, and to monitor teaching and learning reforms for impact on learning in real time. The broad network of public and private universities throughout the country provides an opportunity for collaboration and partnership in research to improve the quality and relevance of education. Further, the development of more equitable and effective resource transfer mechanisms for supporting decentralized budgets could benefit from past and ongoing experiences with school-based management. The emerging consensus among stakeholders in Sudan on the need for education reforms can serve as a critical driver for improving education. Many innovative initiatives have been piloted in the country, providing a viable starting point to scale up to benefit Sudanese children and youth.

This section presents recommendations that address many of the challenges highlighted in the above section. These recommendations need to be implemented in a thoughtful and coordinated manner to achieve sustainable change, building on the opportunities and entry points identified above to initiate the reform process. The recommendations are mainly drawn from the policy notes listed in annex 1. Table 2 provides a summary of the challenges and recommendations, while

more detailed information on both the challenges and the corresponding recommendations can be found in the individual policy notes.

3.1 System Management

3.1.1 Introduce a simplified structure for the central MOE aligned to core MOE functions and a clear division of responsibilities among the federal, state and locality levels.

Develop costed plans for each directorate of the central MOE with clear performance indicators. Transparent, competency-based staff recruitment procedures should be put in place. Most MOE directorates will need to attract new talent to fill the gaps in competencies and skills. Address staffing redundancies. Leverage donor assistance to build the capacity of the new and existing staff and managers, through on-the-job coaching modalities. These measures should contribute to building the capacity for supportive federal supervision and audit of state and locality operations.

3.1.2 Increase spending on education at all levels of government, with priority to basic education, targeting improvements in quality and equity, eliminating regional disparities and gender gaps, and strengthening data collection and reporting on public spending at all three tiers of government.

Agree to a minimum level of spending on education per student at the national level, with more pro-poor spending and support for inclusive education. Increase the predictability and transparency of transfers and budgets, with the possibility of special transfers such as reinstating and increasing the fund to support targeted interventions intended to eliminate or reduce disparities between states, which had been set at 2 percent.[21] Link financing to education outcomes. The use of matching grants could be used to create incentives for states to increase spending on inputs to strengthen students' foundational skills. The school grants program initiated with funding from the Global Partnership for Education (GPE) is a successful mechanism to improve education financing (see box 1). Such programs can be further improved in terms of their design and should be gradually mainstreamed into the government financing to ensure sustainability. Strengthen data collection, reporting and monitoring, linking the federal, state and locality levels, to improve planning capacity and decision-making, as well as the effectiveness and efficiency of public spending.

BOX 1 **Sudan School Grants Program**

A school grants program has been implemented in Sudan as part of GPE-funded projects. The primary objective of the grants is to support student enrollment and retention by creating incentives for parents' engagement and reducing the share of educational costs financed by parents. This can improve student retention in school, especially for girls. It can also contribute to improvements in the learning environment while strengthening the capacity for participatory planning, budgeting and monitoring at the school level. The grants are allocated to schools based on a formula that considers enrollment numbers. The program is designed to create incentives for schools to improve student and teacher attendance as well as promotion rates to upper grades. It does this by linking performance on these parameters to receipt of the entire grant amount after the first year of the project.

The school grants program is expected to benefit all students in Sudan's public basic education schools, which is equivalent to at least 5.4 million boys and girls. Interviews with Sudanese government officials and development partners have revealed the effectiveness of the school grants program in supporting students at the school level, including the enrollment of girls. It also provides an incentive for schools not to collect fees from families.

Source: World Bank (2020a, 2020b).

21. See Policy Note on Financing Education in Sudan: Strengthening the Efficiency and Equity of Public Spending in Education.

3.1.3 Reduce the complexity of the curriculum, and support acquisition of general competences and skills with clear targets for learning and socioemotional growth.

Create an effective institutional and organizational structure for curriculum review and set adequate timelines to develop a curriculum that is lean, competency-based, and focused on clear learning goals including empowering girls. This would include three phases: preparation and development, implementation, and monitoring and evaluation. The international development partners, in collaboration with the government, could provide hands-on technical support and capacity building to the process of curriculum reform to all involved entities. Curriculum review and revision should have a gender dimension to empower girls. Its implementation needs to be closely linked to teacher training. In addition, there needs to be a reform of the assessment system and enhancement of teacher training to align with the new curriculum. Box 2 provides examples of successful curriculum and textbook reforms undertaken by other countries and lessons that have been learned in the process that could inform Sudan's curriculum review and reform.

3.1.4 Improve the pipeline of teacher candidates through stronger, classroom-focused pre-service training and rigorous recruitment procedures.

Improve the pipeline of teacher candidates and conduct rigorous interviews to ensure aptitude for teaching and love of children. Focus initial teacher training on basic content knowledge and practical classroom teaching skills. Standardize the parameters for the allocation of teachers across all states in Sudan, with a clear policy for the number of teachers at each school. Ensure transparent merit-based recruitment and provide incentives to encourage the best performing students to enter the teaching profession. Create a collaborative professional learning community to support preservice teacher education by placing faculties of education and schools that receive student teachers into a network for sharing experiences. When a student teacher is sent to a school for practice, the placement should be supervised by expert teachers who can provide guidance and mentorship. Faculties of Education need to have sufficient financial and human resources to plan and improve their teaching and learning environment and outcomes.

BOX 2 **Lessons from Successful Curriculum and Textbook Reforms — Three Country Examples**

Many developing countries have achieved success in recent years with curriculum and textbook reforms. **Here are three that provide important lessons relevant to the Sudanese context.**

- **Vietnam:** A reform of the primary curriculum in Vietnam achieved success by limiting the number of subjects, giving priority to foundational language and numeracy, and supporting minority language learners (UNESCO 2014). Vietnam's streamlined curriculum was seen as a major factor in its stunning PISA results in 2012 and 2015, when it outperformed many highly developed countries.

- **Kenya:** The Tusome project transformed reading instruction by developing textbooks and structured teachers' guides designed to teach key reading skills. The reading textbook series was revised at least six times to incorporate feedback from teachers and inspectors in order to establish the amount of curriculum content to be introduced in each lesson. The percentage of class 2 children who met the emergent benchmarks increased from 34 percent to 65 percent for English and from 37 percent to 66 percent for Kiswahili; this was a massive gain for a nationwide program (Piper, Destefano, Kinyanjui, and Ong'ele 2018).

- **Mozambique:** Well-managed procurement will dramatically lower textbook costs, while improving quality and curriculum coverage (World Bank, forthcoming). This makes it possible to provide good textbooks in each subject for all children, and to provide corresponding teachers' guides to all teachers, an important factor in the success of both Vietnam and Kenya, cited above. (World Bank, forthcoming)

Source: UNESCO (2014); Piper, Destefano, Kinyanjui, and Ong'ele (2018); World Bank (forthcoming).

3.1.5 Define a vision for the future of higher education in Sudan including the size, shape, mission, and institutional configuration of the system by 2030, including a clear science and technology development strategy.

Increase access to higher education in a financially manageable way by spreading enrollment growth across public and private institutions, through both face-to-face and online modalities, while increasing equity and creating incentives for students to enter programs for which there is greater labor market demand. Move away from traditional teaching methods to more interactive, collaborative and experiential approaches, while strengthening links between universities and the labor market. Modernize governance and management, beginning with a clear definition of the responsibilities of the state and the rights and obligations of higher education institutions. This will include implementation of a sustainable financing strategy that diversifies income sources and promotes efficient public resources use through performance-based budget allocation mechanisms.

3.1.6 Build the capacity of higher education faculty and strengthen quality assurance mechanisms at the national and institutional levels, with special attention to labor market links.

Define autonomy and accountability modalities, clearly describing responsibilities of the state and the rights and obligations of higher education institutions. Establish teaching and learning service units. Provide incentives to implement curricular and pedagogical innovations. Integrate online courses into degree programs. Design and implement an updated assessment system aligned to curricular and pedagogical innovations. Evaluate the quality of existing institutions and programs and align quality assurance mechanisms with international good practices, closing substandard programs and strengthening quality assurance within institutions. Expand student internships and in-company placements, while integrating entrepreneurship training into regular university programs.

3.2 Service Delivery

3.2.1 Strengthen the professional standards and growth opportunities of teachers and school leaders by implementing a competency framework that identifies what is expected of all teachers and school directors.

Set realistic professional standards, creating a competitive career progression ladder and enhancing the working conditions of teachers. Create a pathway for volunteer teachers to become qualified and recognized. Reorient the role of the school director around instructional leadership, both by developing an in-service training program targeted to school directors and supervisors and implementing a transparent merit-based recruitment process for school directors.

3.2.2 Develop an in-service training program oriented to school directors and supervisors.

Provide clear descriptions of the role of school directors and supervisors, focusing on instructional leadership. Increase professional development opportunities for school directors and supervisors to focus more effectively on instructional support. Ensure merit-based recruitment and provide regular access to training, with additional supervision and support for school directors in isolated rural areas. Provide support to school directors to organize teachers into collaborative communities of practice.

3.2.3 Develop a need-driven program of continuous professional development for upgrading the skills and knowledge of all teachers, with special attention to volunteer teachers, teachers working in rural and remote areas, and teachers working with nomadic children, refugee children as well as children who have special needs.

Include support for structured pedagogical approaches (or "explicit teaching") in in-service training using approaches such as scripted lessons, guided practice, and mastery learning. Box 3 provides some examples of collaborative approaches for teacher professional development that may be considered by Sudan. Help teachers

to meet students' individual learning needs. Screening processes for identification of children with disabilities should be combined with referral mechanisms and targeted support for teachers. Develop an induction program for all first-year teachers and put in place a support system for teachers to help them address the learning needs of girls, children with disabilities, and refugee children. The case of *khalwas* will require more thought and dialogue to identify opportunities to transform the *khalwas* by including an academic core curriculum. Consider eLearning through TV and radio as one of the new approaches for teacher training. This should be built on the eLearning experience for students in Sudan.[22] eLearning could reach more teachers as a potentially efficient and effective complement to in-person training.

3.2.4 Make high-quality textbooks and reading materials aligned with the new curriculum available to all students in appropriate languages; provide corresponding teacher guides to all teachers. Complementary materials and assistive devices should be provided for all children with special needs.

Finance textbook printing for all grades in the country through federal resources starting 2023 (the GPE's main grant will finance textbook printing for G2–G5 for 2021 and 2022). Ensure that textbooks are consistent with the new curriculum, in a language that students speak and understand, and set at the level of the students. Adapt materials to the needs of special populations, including nomadic children and other children with diverse needs for learning support. The offer of

BOX 3 Collaborative approaches for teacher professional development

Research shows that teacher professional development is most effective in changing classroom practice when teachers work collaboratively, organizing around team-oriented, school-based classroom instructional improvement, and pedagogy-specific subject areas, as well as when they are provided with continuous support and follow-up. **The collaborative and reflective approaches in high-performing countries such as Singapore, Australia, Canada, Finland, and China often share a few key elements such as the following:**

- **Lesson planning and student assessment.** Teachers collaborate to develop curriculum units and lessons, and to prepare, use, and review school-based assessments to evaluate student learning outcomes. This helps teachers deeply understand the curriculum goals and share their knowledge of content and teaching practices. The approach is particularly useful in helping new teachers or low-performing teachers learn from their mentors or senior teachers in the context of their day-to-day work environment.
- **Teacher-led professional learning.** Teachers take the lead in developing professional learning offerings, which provide more structured learning by teachers, for teachers. Teachers lead professional learning not only in school-based contexts, but also in more formal settings outside the school. Platforms for teacher-leaders to lead professional learning include professional networks, professional focus groups, and professional learning communities. Teachers' unions could also play an important role.
- **Research.** Teachers are organized in groups who work on formulating hypotheses, collecting evidence, analyzing the evidence, and developing conclusions. The goal of the research is to improve educational practices for individual teachers as well as the school through actively exploring real-world problems and acquiring a deeper knowledge of teaching and learning.
- **Performance evaluations.** Teachers are organized to observe each other's classes and provide feedback to each other. In some cases, teachers provide performance evaluations annually.

Source: Liang, Kidwai and Zhang (2016); Darling-Hammond et al. (2017); Evans and Popova (2015).

22. The student eLearning programs through television and radio have been developed since 2020 in response to school closures caused by COVID-19 pandemic.

academic support should be considered for children in *khalwas*. Support teachers properly to provide continuous assessment at the classroom level.

3.2.5 Update the national school construction strategy, extending its scope to all education cycles, adding a school maintenance policy, and mainstreaming the Community Empowerment Modality for implementation.

The allocation of new school facilities will require transparent criteria and planning tools to agree on funding priorities across states, including equitable allocation of new school facilities and to ensure WASH and girl-friendly infrastructure. Create a School Construction Fund (SCF) to channel financial resources to the communities. Develop the capacity of MOE to provide support to communities when they build through a phased approach. Create a monitoring and evaluation capacity to measure performance and improve cost-efficiency and quality. Start the development of a school construction and maintenance policy.

3.2.6 Develop an equity-focused support strategy for early childhood learning and family support under the MOE, and a comprehensive Early Childhood Development (ECD) strategy in collaboration with other ministries.

Set clear targets for learning outcomes (cognitive, emotional and physical), along with quality goals and standards, and regulatory procedures and mechanisms such as inspections and surveys. Establish clear mechanisms for monitoring and data collection. Give all preprimary educators (including those outside the public sector) access to teacher training and support mechanisms, including training for play-based approaches. Provide complementary support to parents for greater awareness of the importance of the early years and how to care for children, including nutrition, health, safety, stimulation for brain function, and play-based learning. Expand the different types of delivery of early learning programmes, including affordable community-based models that can be scaled in a cost-effective manner.

3.2.7 Create equal learning opportunities for girls, ensuring proper sanitation facilities and preventing school-related violence.

Improve awareness among communities on the importance of educating girls and urgently address the large population of out-of-school girls. Build on the existing school grants program to reduce education costs for families, which tend to have a higher impact on girls, and improve the learning environment for girls. Enforce regulations against school-related violence and train teachers on alternative forms of discipline and addressing gender bias. Improve the availability and quality of TVET programs for female youth to equip girls who are out of school with relevant skills for the job market.

3.2.8 Build systemwide resilience and capacity to address the impact of COVID-19 and other external shocks on education and learning, using both ICT and non-ICT interventions.

Develop a strategic framework for resilience that addresses school closures, school reopenings, recovery of lost learning, and emergency readiness. Put in place a range of distance learning interventions (both ICT and non-ICT), building on the television and radio programs developed in Sudan in response to school closures due to COVID-19 pandemic, with improved accessibility and content (box 4). Establish remedial programs and complementary measures to ensure access for all children, along with evaluation capacity to determine learning process. Document the existing digital infrastructure and constraints to its educational use. Give priority to equity and inclusion as a first order concern and focus for the use of educational technology. Develop complementary low-tech and no-tech use where infrastructure is limited. In addition to direct support for students, identify opportunities to strengthen teacher capacity through tech-based approaches where feasible,[23] given the critical need for student-teacher interactions.

The above recommendations, as well as the proposed time frame and entities responsible for implementation, are summarized in table 2.

23. See https://blogs.worldbank.org/education/how-can-countries-implement-low-tech-remote-learning-using-experiences-edu-radio-and-edu.

BOX 4 Remote Learning in Sudan

Remote learning programs were developed in Sudan through TV and radio in response to school closures due to the COVID-19 pandemic. In all, over 100 Arabic and mathematics lessons based on basic school textbooks were broadcast on national TV and radio stations. Two dedicated TV education channels were approved. The TV and radio lessons were accompanied by review materials and quizzes provided to students for use after each episode. Teachers were trained to provide support for the remote learning. These programs have potential for ensuring continued learning and are important measures for building a resilient education system. However, further improvement in terms of accessibility and content are needed. Currently, a large proportion of students and teachers, particularly in remote areas, do not have access to these programs. The content of these programs could also be enhanced to make them more interesting and dynamic. The development of TV and radio programs for other subject areas is a necessary next step. Lessons can be learned from past practice as well as good international experiences when Sudan moves forward to the next stage of remote learning.

TAB. 2 Summary of Challenges and Policy Recommendations

Challenge	Policy Recommendation	Country Examples*	Responsible	Time Frame
System management				
Unclear governance structure with limited accountability, overlapping structures	Introduce a simplified structure for the central MOE aligned to core MOE functions and a clear division of responsibilities among the federal, state and locality levels.	**Pakistan:** Coordination in decentralized system **South Africa:** Central/provincial division of responsibilities for enforcing standards	FMOE, state MOEs	Immediate
Inadequate financing	Increase spending on education at all levels of government, with priority to basic education, targeting improvements in quality and equity, eliminating regional disparities and gender gaps, and strengthening data collection and reporting on public spending at all three tiers of government.	**Uganda, Colombia, Brazil, China:** Minimum spending allocations per student **Brazil (state of Ceará):** Transfers linked to outcomes	MOF, FMOE, state MOEs	Immediate: Increased funding at the school level can create a highly visible, quick win.
Overloaded curriculum emphasizing rote learning	Reduce the complexity of the curriculum, and support skills development and acquisition of general competences, with clear targets for learning and socioemotional growth.	**Vietnam:** Prioritize foundational language and numeracy; support minority language learners	FMOE	Immediate: Development of programs that target emergent literacy skills could lead to a quick win in terms of significant improvements in early grade reading skills.

TAB. 2 Summary of Challenges and Policy Recommendations (*CONT.*)

Challenge	Policy Recommendation	Country Examples*	Responsible	Time Frame
Low quality of incoming teacher candidates	Improve the pipeline of teacher candidates through stronger, classroom-focused preservice training and rigorous recruitment procedures.	**Rwanda:** Network of model schools linked to 16 teacher training colleges.	FMOE, National Council for Education, Professors	Immediate
Deterioration of higher education; lack of clear vision	Define a vision for the future of higher education in Sudan including the size, shape, mission and institutional configuration of the system by 2030, as well as providing a clear science and technology development strategy.	**California (USA):** Higher Education Master Plan	MOHESR	Medium term
Limited quality and relevance of higher education delivery; outdated higher education governance structures and management processes	Build capacity of academic faculty; strengthen quality assurance mechanisms at the national and institutional levels, with special attention to labor market linkages.	**Senegal, Chile:** Performance contracts linked to institutional improvement	MOHESR, universities	Medium term
Service delivery				
Wide range in teacher skills and competencies	Strengthen the professional standards and growth opportunities of teachers and school leaders by implementing a competency framework that identifies what is expected of all teachers and school directors.	**Chile:** Integrated approach which includes initial teacher education, new career structure, new working conditions, and professional development	FMOE, NCTT	Medium term
Most school directors have limited capacity for instructional supervision	Develop an in-service training program oriented to school directors and supervisors.	**Finland:** Rigorous selection process for school directors, ongoing professional development	State MOEs, Faculties of Education, Council of Education and the Teaching Profession, Int'l Dev. Partners	Medium term
Insufficient professional development opportunities for teachers	Develop a need-driven program of continuous professional development for upgrading the skills and knowledge of all teachers, with special attention to volunteer teachers, teachers working in rural and remote areas, and teachers working with nomadic children, refugee children as well as children who have special needs; suitable eLearning modalities such as TV and radio programs may be considered.	**Japan:** Lesson study **Shanghai (China):** Induction, mentoring, school-based professional development	NCTT, state MOEs	Medium term

TAB. 2 Summary of Challenges and Policy Recommendations (*CONT.*)

Challenge	Policy Recommendation	Country Examples*	Responsible	Time Frame
Out-of-date textbooks, limited supply	Make high-quality textbooks and reading materials available to all students in appropriate languages, and corresponding teacher guides to all teachers; complementary materials and assistive devices should be provided for all children with special needs.	**Mozambique:** Good-quality, low-cost, timely textbooks through reforms to printing procurement	FMOE, state MOEs	Medium term
Dilapidated school infrastructure and limited access to ICT	Update the national school construction strategy, extending its scope to all education cycles, adding a school maintenance policy, ICT infrastructure and mainstreaming the Community Empowerment Modality for implementation; mobilize financial resources to implement the strategy to reduce distance to school and improve the quality of school infrastructure.	**Uganda:** School Construction Fund that built 29,000 classrooms in four years **Rwanda:** Hybrid of centralized and community-based school construction to save costs, improve quality, and speed up implementation	FMOE, MOF, Ministry of Tele-communications	Immediate: Rapid building of schools with community engagement will represent a quick win.
Underdeveloped ECD subsector	Develop an equity-focused support strategy for early childhood learning and family support under the MOE, and a comprehensive Early Childhood Development (ECD) strategy in collaboration with other ministries.	**Ethiopia:** Rapid expansion of early learning **Mongolia:** ECD for nomadic populations **Philippines:** ECD provision for disadvantaged populations	FMOE (short term); MOE, other ministries (long term)	Medium term
Unequal learning opportunities for girls	Create equal learning opportunities for girls, ensuring proper sanitation facilities and preventing school-related violence.	**Senegal:** Tostan (prevention of early marriage and FGM) **Kenya:** Provision of free uniforms	FMOE	Medium term
Negative impact of COVID-19 pandemic and other external shocks on learning	Build systemwide resilience and capacity to address the impact of COVID-19 and other external shocks on education and learning, using both ICT and non-ICT interventions, and further improve the content and accessibility of TV and radio learning programs; develop and implement mechanisms to address learning loss due to COVID-19.	**Ghana, Nigeria, Pakistan:** Educational TV **Vietnam:** Distance learning	FMOE, state MOEs	Immediate

*Please consult the original policy notes for more details about the country examples.

3.3. Prioritization and Sequencing of Reforms

A number of parallel reforms are required to address the challenges identified across different parts of Sudan's education system; however, the limited availability of financial and human resources calls for the prioritization of actions. In addition, there is a need to carefully sequence reforms so that immediate priority actions can lay the foundation for medium-term and longer-term reforms. This can include the identification of quick wins that would serve as tangible evidence of a turnaround, strengthen popular and political support for change, and create momentum for future actions. Table 3 below identifies key priority actions for policy development and operations and the suggested sequencing for the Government of Sudan to consider as it develops a roadmap for its ambitious education reform agenda.

TAB. 3 Roadmap of Priority Actions for Policy Development and Operations

Priority Action	Sequence	Time Frame	Example of Quick Wins	Responsible Entity
1. Develop and implement mechanisms to address learning loss due to the negative impact of COVID-19. These could include assessments, Teaching at the Right Level (TARL) interventions, and TV and radio broadcasts coupled with teacher engagement.	Start immediately	Short term	Use existing TV and radio learning programs but with improved content to reach more children for remedial education.	FMOE, state Ministries of Education (SMOEs); international partners
2. Increase spending on education, with priority to basic education.	Start immediately	Short term	Sustain the successful school grant programs which have been financed by the GPE grants.	FMOF
3. Improve learning environment, including making schools available for refugees and children in remote areas, enhancing school infrastructure with attention to the needs of girls, and making textbooks available to all students.	Planning process to start immediately, with implementation in the medium term	Short to medium term	Update the school construction strategy which can guide the implementation.	FMOE, SMOEs (with support from international partners)

TAB. 3 Roadmap of Priority Actions for Policy Development and Operations (*CONT.*)

Priority Action	Sequence	Time Frame	Example of Quick Wins	Responsible Entity
4. Reform the curriculum for all levels of education in conjunction with textbook reform, teachers training and new assessments.	Completion of curriculum review; planning to start immediately for textbook and assessment reform, teacher training	Short term	Complete the curriculum review already underway.	FMOE, FMOHE
5. Upgrade the skills and knowledge of all teachers and school leaders, particularly those working in rural and remote areas.	Start immediately	Short to medium term	Develop eLearning for teachers through TV and radio (building on the successful TV and radio programs for students).	FMOE, SMOEs
6. Improve the pipeline of teacher candidates through stronger, classroom-focused preservice training and rigorous recruitment procedures.	Planning process to start immediately, with implementation in the medium term	Short to medium term	Update the school construction strategy which can guide the implementation.	FMOE, SMOEs (with support from international partners)
7. Implement skills development for youth, particularly for girls.	Start immediately	Medium term	Provide a thorough analysis of this area; complete the TVET strategy to guide youth skills development.	FMOE, Ministry of Labor and Social Development

4. Conclusion

The education sector in Sudan is at a critical point. Expenditure on education is low; learning outcomes are poor and uneven; and the COVID-19 pandemic will continue to test Sudan's capacity. Yet Sudan has shown its determination to improve its education system, and a number of very real opportunities for change have been identified in this report. Enrollment has grown rapidly at all levels, and retention and progression have improved. With strong political commitment to improving the education system, significant reform is possible in the coming years.

Part of the key to substantive reform is a coordinated and planned approach. By focusing on the initial priority areas identified in this report, the Sudanese education system can demonstrate its resilience, and move forward on its intended reform path, learning from other countries' reforms (see annex 3). The recommendations referenced in this policy overview are developed in greater depth in the policy notes (see annex 1) and can serve as important input for a new national strategy to place Sudan's education environment on a positive trajectory.

A road map for the education reform agenda can guide the priority and sequencing of actions to be undertaken, and identify the stakeholders responsible. As a first step, the Government of Sudan could agree on the policy and program priorities as presented in section 3.3 of this report, including quick wins. This would be followed by the development of a new Education Sector Plan to attract donor financing and inform both domestic and external financing for the sector over the short and medium term. Finally, teams with adequate capacity will need to be constituted to carry out the implementation of new programs and policies and monitoring of progress.

Agreement on immediate policy and program priorities should include urgent attention to system management issues to clarify the challenges of managing and financing a decentralized education system that has suffered years of neglect as well as school-level service delivery issues. This will also require greater focus on identifying and addressing the schooling and specific learning needs of the most vulnerable children including girls, which should be an underpinning theme of the entire reform. There is an acute need to obtain reliable data on school-level service delivery and student learning outcomes. Design of a state-level survey to fill in existing data gaps and prepare a more accurate diagnostic should be seen as an important next step. It could serve as a precursor to a more in-depth sector analysis as part of preparation of a new Education Sector Plan.

The development of a new Education Sector Plan would provide stable and strategic direction for years to come and would establish a much-needed opportunity for broad engagement of all stakeholders countrywide in discussions about the future of the sector, and the needs and aspirations of each region of the country. The current Sudan Education Sector Plan will expire in the 2022/23 school year; the new plan would clearly identify the commitments of the government. The proposed consultative process for developing a new plan is an opportunity to ensure both relevance and ownership. It should be part of a communications strategy for strengthening buy-in for reforms among all stakeholders, with a particular focus on parents. The new plan is also an opportunity to build on the existing analysis of the sector and agree on key outcomes and indicators which will assist in monitoring of the sector. This process should result in a clear vision and a set of achievable objectives from early childhood development and basic education through to the higher education subsector.

The implementation of new programs and policies in support of education sector reform will require strengthening of capacity for system management and service delivery, as noted above.[24] The policy notes presented in this document provide promising avenues

24. As this document was being finalized, the transitional government was ousted in an apparent return to military control of the government, placing the potential for external engagement and financial support in significant jeopardy.

for this purpose. It is proposed that a formal process be established immediately for consideration of the recommendations presented in this policy overview and for agreement on a monitoring framework to track process. Further dialogue between the World Bank and the MOE will be needed to identify priority areas of collaboration in coming years.

Several limitations of the current study have prevented deeper examination of the thematic areas. First, a number of core data gaps limited the depth of analysis currently possible within the sector and as part of these policy notes. The most notable of these are the following: (a) budget data are not readily available, particularly at the state level, and particularly in an exploitable format conducive for analytical purposes; (b) there is little information about comparative learning trends over time; (c) population projections available are from 2008 and are outdated, which impacts the reliability of population-based indicators such as enrollment rates; (d) recent data disaggregated by gender are not always available and discrepancies were observed between different sources of data making it difficult to have a clear picture of girls' education in Sudan; (e) there is little information regarding the distance of children's homes to the nearest school, which is critical for planning new school construction; (f) there are no impact evaluations of important programs implemented in the sector by MOE, UNICEF and the World Bank; and (g) there is little information regarding out-of-school children. Collectively, these data gaps present a significant obstacle to evidence-based decision-making and planning within the sector. Second, travel restrictions linked to the COVID-19 pandemic limited the ability of the team to conduct site visits and consult a large number of stakeholders, particularly those who have no access to virtual modes of connecting for discussions. Hence, further in-depth analysis for some topics will be needed in the future when the pandemic restrictions are lifted.

Based on the gaps identified, priority areas for future research could include: (a) youth skills profiles and development in which skills gaps would be assessed, along with proposed options to improve mechanisms for youth skills development and promising approaches based on local and international experiences; and (b) inclusive education. Research priorities would be to explore the status of refugee education and education for children with disability, and to develop evidence-based recommendations for the improvement of inclusive education in Sudan.

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ANNEX 1:

LIST OF POLICY NOTES AND PAPERS SUMMARIZED IN THE OVERVIEW

This overview is based on the following policy notes and papers on education in Sudan:[25]

1. Building a Resilient Education System in Sudan: A Strategic Framework
2. Construction of Basic Education Schools in Sudan
3. Curriculum and Learning Assessment in Sudan
4. Early Learning and Pre-Primary Education in Sudan
5. Financing Education in Sudan: Strengthening the Efficiency and Equity of Public Spending in Education
6. Improving Girls' Learning Opportunities and Outcomes in Sudan
7. ICT in Education in Sudan
8. Institutional Reforms to Strengthen Education Sector Stewardship in Sudan
9. Raising the Performance of Higher Education in Sudan
10. Teachers and School Leaders in Sudan

25. All policy notes and papers were developed by the World Bank team in collaboration with the Government of Sudan, except for the policy note, "Early Learning and Pre-Primary Education in Sudan", which was developed by Ewertson and Craig (UNICEF Sudan), following the Sudan International Education Conference in Khartoum in January 2020.

ANNEX 2:

A BRIEF HISTORY OF THE SUDANESE EDUCATION SYSTEM

Sudan has a history of education and literacy that dates back thousands of years. In the 13th century, large-scale education was developed with the establishment of the *khalwas*, or religious schools. These schools taught the memorization and interpretation of the Koran, as well as Islamic law and basic Arabic and mathematics.

In the 1850s, during the colonial period, state-funded public education began with the opening of five schools. Following that period, from the early 1900s, a significant expansion of state-funded basic education began, initially solely for boys. In 1907, basic education for girls also began to be provided. In higher education, the Gordon Memorial College was established in 1902 and the Omdurman Scientific Institute in 1912.

After independence in 1956, Sudan largely maintained the structure, curriculum, organization, training and bureaucracy of the British education model. In 1965, the language of instruction in primary and secondary schools changed from English to Sudanese Arabic; this policy was extended to the university level in the 1990s. Also in the 1990s, teacher training became the responsibility of faculties of education in public universities that were established in every state.

Currently, education policies and curricula are established centrally, but implementation is the responsibility of states and municipalities.

In parallel with public education, the *khalwas* operate outside the responsibility of the Federal Ministry of Education. Many children attend *khalwas* in place of formal schooling.

ANNEX 3:
COUNTRY EXAMPLES OF EDUCATION REFORMS

- **Education Reform in Ontario.** Ontario's reform in elementary and secondary schools was successful in improving standardized test scores (literacy and numeracy) and also graduation rates. The reform enabled "improving teacher culture to foster a sense of shared responsibility and granting a high level of autonomy to teachers and administration in implementing reform in classrooms" (Boyd 2021, 39). This reform had successfully made a bridge between the policies, like standards, assessments, and accountability, with the pedagogical teaching practice at the school level (Cohen and Mehta 2017). This bridge was supported by investing in teacher education, funding, system organization, and leadership. For example, the reform made possible the creation of a Literacy and Numeracy Secretariat to support effective leadership capacity at the provincial, district and community levels. "The Ontario reform shows that changes in teacher performance can be motivated by investing resources in professional development and supporting the structure rather than the size of the incentive" (Boyd 2021, 55).

- **Mexico's Education Reform.** The education reform in Mexico in 2013 was a unique systemic reform with elements of accountability, new pedagogies and curricula, professional development policies, and other changes. "The Reform followed international best practices for a comprehensive system-level change that integrated all the different elements of the education sector to generate a student-centered transformation to foster global citizenship and 21CC competencies" (Islas, Calef and Aparicio 2020, 80). However, the reform was overturned by the new administration. Its failure was in part the result of an uneven commitment on the part of education authorities to fully implement all the elements of the reform. Another key factor that hindered its implementation was that the reform started through implementation of a teacher reform that included teachers' evaluations with a merit-based system to appoint new teachers, promote them within a structured professional pathway, and determine who remained in the classroom (Islas, Calef and Aparicio 2020). This reform element encountered strong resistance from teachers—an important reminder that the more ambitious the reform, the more important it is to ensure full buy-in and ownership by the main education actors.

- **The Punjab School Reform Roadmap: A Medium-Term Evaluation**. The Punjab Schools Reform Roadmap (PSRR) tackled challenges in the most populous province in Pakistan, aiming to:

  1. Increase access to schools for school-aged children.
  2. Improve the quality of education being imparted in public schools.
  3. Provide robust monitoring and evaluation mechanisms for evidence-informed service delivery and improved accountability, embedded in each layer of the system.

  After 10 years of the PSRR, the education system has been transformed, with more accountability and increased capacity of educational actors, which has also helped to make the system more accountable. The structural transformation has been sustained and is likely to continue to be characterized by accountability and decision-making based on robust information and evaluations (Chaudhry and Waqar 2021).


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