

White Paper

May 2024

EVIDENCE INFORMED POLICYMAKING:

EDUCATION DATA-DRIVEN DECISION
MAPPING IN KENYA AND SENEGAL



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Executive Summary



Between December 2022 and February 2024, Development Gateway: An IREX Venture (DG) and IREX, funded by the William & Flora Hewlett Foundation, conducted research in Kenya and Senegal to explore the complexities of education data supply, access, and decision-making processes. Effective decision-making in education relies on reliable, comparable, and accessible data managed through efficient information systems, facilitating resource optimization and goal monitoring. However, many countries, including Kenya and Senegal, experience challenges with unreliable education data, limited data utilization for decision-making, and insufficient national capacity to manage and leverage data effectively.

The research, employing DG's Custom Assessment and Landscape Methodology (CALM), involved a desk review, stakeholder consultations, interviews, and validation workshops. Rather than an evaluation or comprehensive diagnostic, the study aimed to gather diverse perspectives and stories from stakeholders to contribute to ongoing discussions, technical investments, and reform efforts. We present key findings in Kenya and Senegal, before comparing and identifying shared characteristics that may be useful to assess in other country contexts.

Summary of Data Ecosystems

◆ Kenya









Kenya has undertaken substantial education reforms, such as the adoption of a Competency-Based Curriculum (CBC) in 2017, alongside improvements in teacher training, textbook policies, and decentralization processes. Coinciding with these reforms, significant investment has been made in the National Education Management Information System (NEMIS) to enhance data collection and policy planning, aiming to replace manual systems and ensure reliable data for over 16 million learners in 80,000 institutions.

The establishment of NEMIS has played a fundamental role in enabling data generation, management, and analysis. It is used in essential ways, demonstrating a desire for data to facilitate decision-making. For instance, the NEMIS provided baseline data to guide policy direction in implementing the recent CBC reforms and was also instrumental during the reform proposal process of the Presidential Working Party (formed in 2022 to review CBC implementation). However, a general dissatisfaction with data quality and

availability remains. Stakeholders may be motivated to use data in decision-making, but lack access to data as it is not freely shared or disseminated. Moreover, stakeholders have low trust in data quality due to overlapping and conflicting indicators, lack of harmonization, and instances of misuse.

Rather than focusing solely on technical solutions to improve the education data ecosystem, Kenya should also establish data governance mechanisms including policy frameworks, data sharing protocols, data standards, and reviews of both technical and human resource needs. Effective governance and standardization can mitigate political realities, such as the misalignment of incentives for data sharing and use, by improving reliability, accuracy, and trust in education data. The following recommendations flow from existing efforts to further strengthen and institutionalize the NEMIS, including the latest education sector plan and the findings of the Presidential Working Party on Education Reform (PWPER).

RECOMMENDATIONS

 <h3>Data Governance</h3>	 <h3>Tools & Resourcing</h3>
<p>Establish a broad education data policy, legal framework, and set of protocols that govern the production and use of education data. These should provide legitimacy, clarity, and coherence around roles and responsibilities, clarify how data management and analysis operate in tandem with data protection and security laws, align incentives for data integration and data sharing, and specify budgeting and human resource requirements.</p>	<p>Strengthen the pipeline of data specialists to boost human resources and develop data analysis competencies. Prioritize data analysis and data synthesis skills in programs aimed at training education specialists and leaders (i.e., capacities to prepare briefs and analytical summaries for key decision-makers).</p>
 <h3>Data Governance</h3>	 <h3>Tools & Resourcing</h3>
<p>Implement protocols for data sharing that do not require providing full, online access to databases (e.g., using password protection, digital stamps, and other security measures), including protocols for actors outside of government.</p>	<p>Review data collection, processing, and validation tools to prioritize the accuracy and reliability of data and to prevent misuse</p>
 <h3>Data Standardization</h3>	 <h3>Tools & Resourcing</h3>
<p>Harmonize individual school IDs and continue investment in an integrated learner database with identifiers that endure through the education lifecycle of a student</p>	<p>Review data collection, processing, and validation tools to prioritize the accuracy and reliability of data and to prevent misuse</p>
 <h3>Tools & Resourcing</h3>	 <h3>Data Standardization</h3>
<p>Take stock of current and potential use cases for NEMIS data at the data collection level and make this data accessible (e.g., schools using data for feeding programs, teachers using data to communicate with parents, etc.). This can help ensure that NEMIS data serves multiple users and incentivizes accurate reporting.</p>	<p>Harmonize indicators across ministries and SAGAs to relieve the burden on data collectors and create a communication strategy to clarify how this data is being used.</p>



Senegal

The education sector in Senegal has embarked on substantial reforms aimed at enhancing quality, equity, and inclusive governance. The recent establishment of the National Education Information and Management System (SIMEN) aims to ensure comprehensive data availability for effective planning and monitoring, facilitated by strategies such as capacity-building, digital infrastructure provision, and network connectivity expansion across educational institutions.

Stakeholders generally acknowledge SIMEN's success in providing widely available and well-organized data. However, challenges remain, including incomplete or delayed data on certain indicators such as promotion, repetition, and pupil drop-out, as well as concerns about data quality and the level of disaggregation. Incomplete and delayed data from different sub sectors also hinder comprehensive decision-making. Although stakeholders are generally satisfied, this is likely due to a lack of demand and need for additional data, given that it is a high-needs

context and a relatively nascent data system.

Therefore, it will be important to focus on establishing governing frameworks for data use that increase the demand for education data; establish data use as a norm; and educate everyone in the system about the importance of collecting, analyzing, and using data - especially among those who bear the burden of reporting that data. Senegal can maximize the value of their education data investments by increasing the capacity of education stakeholders to use that data for their own decision-making, especially at departmental and school levels. Critically, national education data systems should meet the information needs of stakeholders at all levels (i.e., not solely for national-level reporting) to improve incentives to report routine, timely, high-quality data. The following recommendations avoid increasing the complexity of data collection and processing while trying to increase the likelihood of data being used regularly and continuously.

RECOMMENDATIONS



Stipulate demand

Strategically place statisticians and analysts in decentralized education departments where timely data is more accessible. Promote visibility and demand for data-informed planning. While data may be basic, descriptive data can still inform district and local officials about teachers, learning materials, school sites, student attendance patterns, etc.

Maximize the perceived value of existing datasets and promote additional demand for data by harnessing deeper insights related to data already being used for decision-making. Use, for example, data visualizations, graphics, or data summaries for all schools other than long-form, detailed reports with raw numbers.



Increase capacity

Provide additional training for data producers/users at the national level to conduct data analysis. Provide guidance on how to integrate datasets with external databases (e.g., learning and financial data). Rather than seeking to establish a fully integrated and interoperable data system, integration should be addressed sequentially and according to current priorities.



Meet information needs

Institutionalize systematic data collection by issuing an administrative note. Assign a budget line for data collection and analysis. This will motivate the creation of a clean, reliable, and valid list of all schools in the country.

Increase the scope of data collection efforts and statistical campaigns. Include non-formal education providers and daaras



Reduce reporting burden

Prioritize improving connectivity Prioritize this over investing in IT hardware and resources



Increase capacity & reduce reporting burden

Provide additional training for data collectors at the school level and develop a pipeline to recruit, train, and support education sector data scientists. In addition to technical skills, training should also include endorsing the benefits of collecting and using data.

Introduction

Between December 2022 and February 2024, Development Gateway: An IREX Venture (DG) and IREX, with financing from the William & Flora Hewlett Foundation, worked to understand real-world incentives, nuances, and pain points related to education data supply and access; skills and analytical tools; and decision-making processes in Kenya and Senegal. Rather than conduct a complete diagnostic of education data systems, the study seeks to add to the discourse by collecting a snapshot of stories and perspectives of how different stakeholders engage with the data ecosystem to inform further research and reform priorities.

Effective decision-making in education relies on relevant, comparable, and available data managed in efficient information systems. Such systems help policymakers know what works and what doesn't, optimize scarce resources, monitor goal achievement, and improve trust. What determines the performance of an education management information system (EMIS) is its ability to consistently and reliably answer the questions that users raise.

While the critical importance of data systems has long been recognized, many countries still face a lack of reliable education data, limited use of data for decision-making, and inadequate national capacity to manage and leverage data.¹ However, countries have differing, and sometimes even compounding, challenges. For instance, according to a recent GPE analysis, many data systems suffer from what might be called an “opposite-extremes problem.” At one extreme, too many actors collect too much data through special-purpose surveys, exasperating teachers and school officials. At the other extreme, there is plentiful data across sectors which, if integrated, could provide holistic portraits of schools. However, this integration seldom happens.²

Globally, this has inspired significant investment and focus on the development and assessment of EMIS, meaning a unified system for data collection, integration, processing, maintenance, and dissemination. Several international task forces and coalitions have been created to strengthen education information systems, driven by international development organizations and regional agencies such as the World Bank, the Global Partnership for

1 GPE (2019b): Meeting the Data Challenge in Education: <https://www.globalpartnership.org/sites/default/files/2019-07-15-kix-data-final-english.pdf>

2 GPE (2019b): Meeting the Data Challenge in Education: <https://www.globalpartnership.org/sites/default/files/2019-07-15-kix-data-final-english.pdf>

Education, the Association for the Development of Education in Africa, and UNESCO. Accordingly, several tools have been employed to assess and diagnose EMIS quality.³

However, it is now recognized that promoting top-down or “off-the-shelf” data management systems is not adequate, nor sustainable, and new approaches are needed.⁴ Complicating efforts further, the advent of digitalization has increased the demand for information to be granular, detailed, and linked to support real-time management and monitoring of services.⁵ Experiences in Kenya and Senegal, together with the existing literature on global education findings, suggest a need for harmonized investment in:

i) Data governance⁶: establishing national standards for data collection, aggregation, indicator definitions, and data sharing protocols can significantly reduce redundancies, relieve the reporting burden of school staff, and maximize the utility of existing data investments.

ii) Incentives for data use⁷: establishing data use as a norm requires generating demand for timely, high-quality, and fit-for-purpose data in decision-making. This requires investing in both human and technical resources; ensuring that data meets key decision and information needs; and increasing the capacity and awareness of the potential impact of data use for planning, policy design and implementation, and school-level operations

iii) Interoperability of existing data systems⁸: the current education data landscape in Senegal and Kenya contain a multitude of data systems, school surveys, and official statistics, with limited exchange and interoperability across data systems. This leads to inconsistencies across data systems, mistrust among data users, and limited ability to aggregate data to inform a complete picture.

3 E.g., the World Bank [SABER EMIS](#); UNICEF diagnostic tool based on SABER, UNESCO framework for assessing quality of education statistics ([Ed-DQAE](#))

4 Arnott, A., Bester, G., Bah, A., Crouch, L., & Mohamed, F. (2023). KIX Data, Data Systems and Data Use Scoping Study. GPE-KIX.

5 Ibid.

6 Baghdady, A., Zaki, O. (2019). Secondary Education Governance in Sub-Saharan Africa. World Innovation Summit for Education, Mastercard.

7 Wamutoro, M., Kessio, D.K., & Wambua, B.K. (2022). *Effectiveness of EMIS for student information management on management of public secondary schools in Uasin Gishu County, Kenya*. *Reviewed Journal International of Business Management*, 3 (1),122–133.

8 For more information on education data interoperability frameworks, see Common Education Data Standards, School Interoperability Framework, and the Ed-Fi data standard.

Rather than continuing to invest in new data systems, efforts could be better placed in supporting harmonization and interoperability of existing systems to create a more holistic view of education system performance, building on data governance suggestions above.

◆ Methodology

This research consisted of a desk review, stakeholder consultations, key-informant interviews, and in-country validation workshops that sought to understand the decision space of education policymakers in Kenya and Senegal. Using DG's Custom Assessment and Landscape Methodology (CALM)⁹ – a bottom-up approach that places people and the decisions they make at the center of the analysis – the research team defined the research questions and scope of the project based on feedback from initial stakeholder consultations. By first understanding stakeholder priorities and user needs, enablers and barriers to data governance, data use, and interoperability can be understood to achieve better organizational learning and decision-making. The research teams used interviews with key informants to gather deeper insights into the existing education data systems – strengths, weaknesses, and potential areas for improvement. Validation workshops then solicited feedback on the accuracy and relevancy of these themes and findings.

IREX and DG, in concert with the Hewlett Foundation, selected the two study countries, Kenya and Senegal, because:

- 1) Each country has demonstrated its commitment to working toward improvements in the data ecosystem;
- 2) Both countries represent different types of education systems, with varying levels of complexity; and
- 3) IREX and DG have established country teams and existing relationships with key stakeholders in both countries.

In both Kenya and Senegal, teams interviewed a cross-section of data producers and users, including those who collect and submit raw data, those who analyze and interpret data, and

⁹ Kirby, P. & Bhatia-Murdach, V. (2018). The Custom Assessment and Landscaping Methodology: Balancing Accountability and Learning in M&E Systems. Washington, DC: Development Gateway.

those who make program and policy decisions based on data. The assessment in Senegal was conducted with COSYDEP, a consulting non-profit based in the country. During the assessment phase, the team interviewed 24 key informants, comprising 13 governmental organizations, 7 civil society organizations, and 4 development partners. The DG and IREX team met with 19 stakeholders in Kenya: 7 semi-autonomous government agencies, 4 sub-national government representatives, 1 teacher, 1 curriculum support officer, 2 school associations, 1 representative from the Office of the Deputy President, and 3 entities from the private sector. High-level Ministry of Education officials were absent from the study in Kenya, limiting the study's ability to provide a comprehensive overview of the data ecosystem and make comparisons across the two countries.



Kenya



National Context

Education Sector Overview

Kenya has made impressive educational gains, including increasing enrollments at all levels and consistently improving learning outcomes, making it one of the top performers in education in the region. Since the implementation of Free Primary Education (FPE) and Free Day Secondary Education (FDSE) in 2003 and 2008, respectively, the country has achieved nearly universal primary education, and secondary enrollment increased by more than 50 percent in the seven years preceding the pandemic. Growth

in the student population has been matched by significant increases in the number of new educational institutions and learning centers as well as the increased recruitment and deployment of teachers. These efforts have been enabled through consistently high prioritization of financing for education; the sector receives about 25 percent of the annual budget, equivalent to 6.4 percent of GDP.

Yet, persistent challenges remain. While Kenya stands out among its peers in terms of educational performance, the 2019 National Assessment System for Monitoring Learner Achievement (NASMLA) shows that only 58 percent and 59 percent of learners in grade 3

meet the minimum proficiency levels in literacy and numeracy, respectively. In grade 7, the comparative figures are 44 percent for literacy and 29 percent for numeracy.

National averages also mask significant disparities across regions and incomes. For instance, only six out of ten children from the poorest quintile who enroll in Grade 1 are expected to complete Grade 6, compared to nine out of ten children from the wealthiest quintile.¹⁰ Primary National Enrolment Rates also vary across regions, ranging from 42 percent in Garissa County to 96.8 percent in Nyeri County, and expected years of schooling range from as high as 13.8 years for some regions to as low as 6.5 years of school in other regions.¹¹ The lower enrollment regions include the major refugee-hosting counties of Turkana and Garissa, which collectively host 84 percent of Kenya's refugee population. The COVID-19 pandemic further deepened such inequities due to lengthy school closures and

differentiated access and capacities to engage in online learning.¹²

Governance in the Education Sector

Kenya adopted a new Constitution in 2010, which enshrined education as a constitutional right and also established the governance of basic education as a shared function between the national government (divided among four State Departments and multiple Directorates)¹³ and the county governments, and established the Teachers Service Commission as a constitutional body. The national government is mainly responsible for enacting education policy, standards, curricula, and examinations; county governments are responsible for pre-primary education and childcare facilities within their jurisdictions, and the Teachers Service Commission is charged with registering, employing, promoting, disciplining, and paying basic education teachers.

10 Ministry of Education, Republic of Kenya. (2021). Kenya Global Partnership for Education (GPE) Compact.

11 World Bank. (2022). Primary Education Equity in Learning Program. Program Appraisal Document. Report No: PAD4913

12 Recent surveys show that 50 percent of learners were not able to engage in online learning due to lack of relevant devices, inadequate access to online content, inadequate capacity to use information and communication technology (ICT) in learning, and inability to afford and access the internet and electricity, among other challenges

13 Departments: The State Department for Early Learning and Basic Education; State Department for University Education and Research; State Department for Vocational and Technical Training; State Department for Post-Training and Skills Development

Directorates: Administration and Planning; Directorate of Basic Education; Directorate of Secondary and Tertiary Education; Directorate of Quality Assurance and Standards; Directorate of Policy, Partnerships and East Africa Community Affairs; Directorate of Alternative Provision of Basic Education and Training; Directorate of Technical Accreditation and Quality Assurance; Directorate of Higher Education; Directorate of Research Management and Development; Directorate of Youth Training; Directorate of Special Needs Education

Table 1. Basic Education Government Stakeholders

Institution	Role
Ministry	
State Department for Early Learning and Basic Education	Sets policies and standards for primary schools, secondary schools, and special education institutions, including curriculum and examinations.
Semi Autonomous Government Agencies	
The Kenya National Examinations Council (KNEC)	Administers primary, secondary, and tertiary education examinations; Tests draft curricula and carries out equivalence procedures of certificates and diplomas
The Kenya Institute of Special Education (KISE)	Conducts training of teachers involved in providing education for children with special needs; Serves as a resource center for producing, collecting, and disseminating information on Special Needs Education.
Kenya Education Management Institute (KEMI)	Provides capacity building for Ministry staff and management training for heads of learning institutions; Provides research and consultancy services in the education sector; Produces and disseminates information related to administrative management, technical, and education reforms.
Kenya Institute of Curriculum Development (KICD)	Develops, reviews, vets, and approves local and foreign curricula and curricula support materials for use at all levels of education and training in Kenya except at university level
Centre for Mathematics, Science and Technology in Africa (CEMASTEA)	Provides support in infrastructure, training, and research in Mathematics and Science subjects
Kenya Literature Bureau	Publishes learning and teaching materials for educational institutions at all levels
School Equipment Production Unit	Produces and supplies school equipment, including furniture and science equipment, in schools and colleges
Kenya National Qualifications Authority	Establishes and regulates the National Qualification System
Institute for Capacity Development for Teachers in Africa (ICDTA)	Builds teachers' capacities to cope with pedagogy-related challenges
Kenya National Commission for UNESCO (KNATCOM)	Ensures that Kenya contributes to the international agenda in the five areas of UNESCO's competence (i.e., Education, Natural Sciences, Social and Human Sciences, Culture, and Information and Communication)
Jomo Kenyatta Foundation	Publishes education books for all levels of education
Constitutional Commissions	
Teachers Service Commission (TSC)	Registers trained teachers; Recruits and employs registered teachers; Assigns teachers employed by the Commission for service in any public school or institution

Sources: Republic of Kenya. (2020). Revised Executive Order No. 1 of 2020; INCLUDE Platform. (2021). Kenya Stakeholder Mapping Report; Ministry of Education, Kenya. (2021). Education Sector Report.

Despite the constitutional provisions and enactment of an array of laws to govern the education sector, governance challenges persist due to duplication and ambiguities of the mandates of operating bodies. For instance, 30 different Semi-Autonomous Government Agencies (SAGAs) are central to education management. SAGAs undertake specific development and strategic activities and retain administrative and financial independence.¹⁴ Additionally, the Director General's (DG's) office within the State Department for Basic Education has been established under Section 54(3) of the Act, but its functions have not been spelled out. Although national level policies and data strategies are in place, there is no single policy or legal framework dedicated to governing the collection and use of education data in Kenya.



Kenya has implemented ambitious education reforms to improve education quality, including the recent adoption of a Competency-Based Curriculum (CBC) in 2017 and accompanying reforms to teacher professional development, textbook policy, and management practices to cement decentralization processes at the local level. A Presidential Working Party on Education Reform (PWPER) was also recently appointed in September 2022 to conduct a comprehensive review of the implementation of the CBC, as well as a review of the basic education and technical and university education subsectors. PWPER submitted the final report ("Transforming Education, Training and Research for Sustainable Development in Kenya") to the President in June 2023 and made several recommendations to respond to challenges evidenced during the implementation of the CBC, including:

"... curriculum overload and overlaps; low parental engagement; low attainment of learning outcomes; inadequate infrastructure and learning materials; and inconsistencies and ambiguities in law causing conflicts. Other challenges include a high number of out-of-school learners; inadequacy of teacher capacity; underfunding; and failure to fully address factors that exclude some categories of learners like the marginalized groups, learners with special needs, and adult and continuing education."¹⁵

Within the framework of these reforms, the Government of Kenya has invested heavily in the

14 World Bank. (2022). Aiming High: Securing Education to Sustain the Recovery. *Kenya Economic Update*. Washington, DC: World Bank Group.

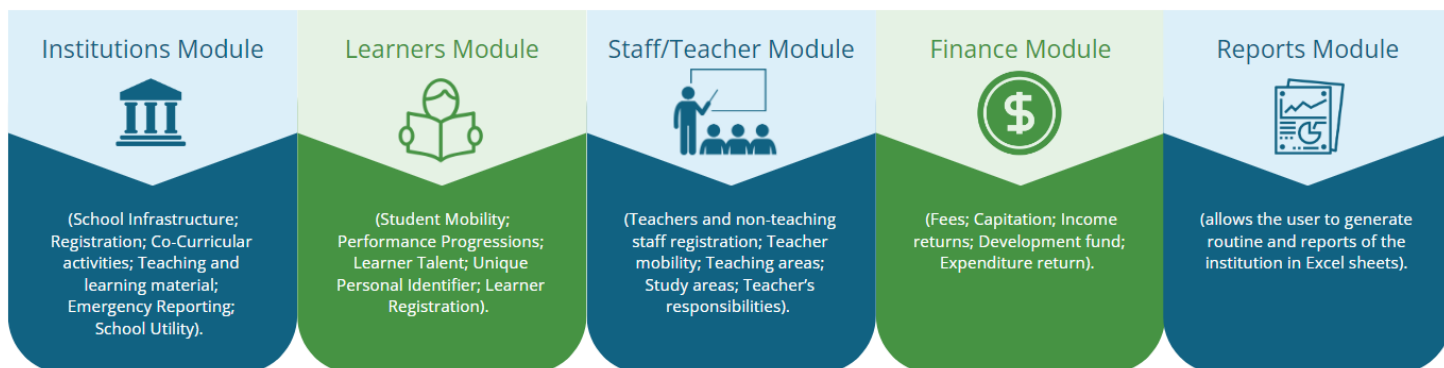
15 Munavu, R.M., (2023). Transforming Education, Training and Research for Sustainable Development in Africa. *Report of the Presidential Working Party on Education Reform*.

National Education Management Information System (NEMIS) to facilitate the collection of data for policy formulation and planning at all levels of education. Launched in 2017, with assistance from the Global Partnership for Education (GPE), NEMIS was designed to provide quality data that is reliable, relevant, and easily accessible. It aimed to replace the previous system in which data collection was largely manual. The NEMIS platform was operationalized to support the digital registration of learners/students to minimize inconsistencies within the country's large and complex education sector that services over 16 million children and youth in over 80,000 learning institutions.¹⁶

Data Supply

NEMIS incorporates key modules designed to capture information on learners, institutions, finances, and teachers and staff for all basic education institutions (primary and secondary). Quantitative data is collected from schools (primarily by teachers) using Google Sheets and submitted electronically; observational data from school visits and other qualitative data are also input via Google Sheets.

NEMIS includes five modules:



However, stakeholders expressed that despite NEMIS expectations for harmonizing insights from this increased supply of data, critical limitations exist, including duplicate and non-interoperable data sets, incomplete and inaccurate data capture, and lack of data sharing.

¹⁶ World Bank. (2022). Aiming High: Securing Education to Sustain the Recovery. *Kenya Economic Update*. Washington, DC: World Bank Group.

Duplicate and non-interoperable data sets. While NEMIS was intended to be a single source of data for all Kenyan learners in basic education, institutions within the education sector operate in silos and use different data systems that do not talk to each other. For instance, the Ministry of Education, Teachers Service Commission, Kenyan National Examination Council, and the Kenya Institute of Curriculum Development operate with *distinct data systems using separate school IDs for the same school, causing challenges in the harmonization and interoperability of datasets.*¹⁷

Stakeholders mentioned that this lack of harmonization and culture of minimal data sharing undermines trust in data and causes difficulty in obtaining accurate data. For example, one stakeholder noted “If you need info to know something for schools in Kwale, for example, you have to go to two offices to be sure your data is up to date. You have to go to [the TSC Director and the Ministry of Education Director] because they are collecting different types of data about the same school and the same children, and sometimes they don’t correlate. We ask for data from MoE and then from TSC and both figures are different.” Currently, no data-sharing framework is in place.

In addition to undermining trust in data, duplication and overlap in mandates place a high burden on data collectors and suppliers, especially at the school level. For instance, one stakeholder noted, “Different entities require different data from us, including TSC, KICD, and MoE. We have to fill in different forms and respond to different questions. We also collect information for different projects within the school. The NEMIS portal also has different requirements in addition to those of the SAGAs. So, we have quite a lot of work to do [...]. Repetition might make teachers just copy-paste the data instead of seeing that there might be a difference in the intention.” Limited connectivity at the school level also means that data is input manually or over unsafe networks, leading to unsecure and delayed data collection.

Some stakeholders also pointed to a lack of ICT competencies of teachers and principals as a challenge to uploading complete data. This sentiment is also reflected in a recent study on NEMIS performance in public secondary schools in Nairobi County, which found that only 33 percent of the respondents have attended NEMIS training, while the majority (67 percent) were yet to be trained.¹⁸

17 Ministry of Education, Republic of Kenya. National Education Sector Strategic Plan for the period 2018-2022. Accessed: <https://planipolis.iiep.unesco.org/sites/default/files/ressources/kenya-nessp-2018-2022.pdf>

18 Oseko, E.B. (2021). Monitoring and evaluation system components' and performance of national education management information system in public secondary schools within Nairobi county, Kenya.

Incomplete and inaccurate data capture. To date, NEMIS has yet to comprehensively capture all data, including information on students, teachers, and school locations. For instance, stakeholders shared that secondary school data on enrollment is more comprehensive and reliable than primary school, and there is no way of controlling how private schools register. This sentiment is confirmed by a 2021 report that found NEMIS had a 90 percent implementation rate in secondary education, where data from the system was used to finance Free-Day Secondary Education (FDSE), conduct Form 1 Selection, and monitor the transition of learners from primary to secondary schools. Yet, in primary schools, only 65 percent had captured data in NEMIS.¹⁹ Stakeholders also shared that some learners may miss out on government capitation grants because their data is outside of NEMIS.

Conversely, but relatedly, stakeholders reported instances of misuse, such as creating ghost schools and learners to obtain capitation funds. This echoes findings in a recent audit report²⁰ as well as a report to Kenya's National Assembly, which showed a variance of up to 50 percent of learners in NEMIS as compared to the actual numbers in schools.²¹ Stakeholders noted there is no mechanism or system to mitigate this misuse. Learners and schools are often still counted manually despite a digital register being in place.

Dissatisfaction with the availability of data for decision-making. For those without NEMIS credentials, including some SAGAs, data access must be requested directly from the central ministry or other government agencies. This can be a long and difficult process. Government agencies are seen as "gatekeepers" of data, and staff responsible for sharing information must first confirm conformity with data protection regulations and seek clearance from executives before sharing. Stakeholders cited that Kenya's Data Protection Act, which makes it unlawful to collect, process, and share data of individuals without their prior permission, limited their willingness to share data, particularly where students' personal data is involved. Education Statistical Booklets are compiled with data from NEMIS but are not published regularly. The last booklet was published in 2020.

As a result of these shortcomings, the government has recently launched a re-engineer of

19 Republic of Kenya. (2021). Treasury Education Sector Report 2021: Medium Term Expenditure Framework 2022/23 – 2024/25. Accessed: <https://www.treasury.go.ke/wp-content/uploads/2021/10/EDUCATION-SECTOR-REPORT.pdf>

20 Nyamori, M. (2022, May 25). Millions lost to ghost learners, double payment to public schools. *The Daily Nation*

21 Oseko, E.B. (2021).

NEMIS. Updates will give users like parents, teachers, and school directors more direct access to data through a decentralized approach. It was further recommended to change the name from NEMIS to the Kenya Education Management Information System (KEMIS) to capture a widened scope of data, including from tertiary and vocational institutions, school-age learners who are out of school, and introducing unique identifiers for each child from birth.²²




Data Demand and Use

Establishing NEMIS was fundamental in enabling data generation, management, and analysis in Kenya. It is used in essential ways and demonstrates a desire for data to facilitate decision-making. The educational statistical booklet, for instance, provided baseline data to guide policy direction in implementing the CBC and was also instrumental during the PWPER reform proposal process (GoK, 2020). For instance, a stakeholder reported that they relied on information from the booklet when presenting their proposals to the Presidential Working Party. The committee adopted some of the proposals, as in the case of Junior School being domiciled at the primary school level.

Interviewees also reported that the use of NEMIS was evident in the registration of schools, registration of learners, transfer of learners from one school to another and registration for national examinations, as well as informing the government of gaps in infrastructure and resources, and improving teachers' and students' welfare. Stakeholders also point to the use of data at the county level, where NEMIS data is mainly used to analyze decisions on the posting of teachers, distribution of teaching and learning resources, and distribution of capitation of grants.

Still, challenges impede data use. Stakeholders at the national level expressed challenges with data not being available in a timely way. For instance, a respondent reported data being out of date and not regularly updated, leading to delayed decisions: "By the time the agency knows that they do not have language teachers to deploy to schools, it's late—or other times there is an overflow of graduate teachers, yet the opportunities are few." Additionally, decision-makers expressed that while staff are well-trained in managing the technical aspects of the data system, they have limited skills for data analysis and synthesis, such as being able to present data in

22 Munavu, R.M., (2023). *Report of the Presidential Working Party on Education Reform.*



easy-to-consume formats or in summative policy briefs.

At the school and district levels, even though stakeholders acknowledge collecting a wealth of data, data suppliers are not certain how data is—or should be—put to use. As stated by one stakeholder, “NEMIS is not meant for the school to use. It is meant for the Ministry.” This mirrors findings from an earlier pilot of e-EMIS tools by USAID, which found significant school-level challenges in collecting and using data, including data access permissions, failure of district education officers and teachers to understand and buy into the value of data, and frustration around inability to act on data.²³ At the national level, stakeholders also cited a “conservative culture of data management and resistance to change,” including resistance to the use of data and ICT software and hardware. Accordingly, despite investment and support to NEMIS, issues related to the penetration of ICT infrastructure, human resource capacity gaps, and complex data management processes remain.²⁴

23 RTI (2016) Data for Education Research and Programming (DERP) in Africa (Kenya Big Data Project), RTI https://ierc-publicfiles.s3.amazonaws.com/public/resources/22.%20DERP%20Kenya%20Big%20Data%20Report_FINAL.pdf

24 Oseko, E.B. (2021).



Senegal



National Context

Education Sector Overview

Senegal has long committed to prioritizing investment in education. Compared to other sub-Saharan countries, the country dedicates one of the highest percentages of the national budget and gross domestic product (GDP) to education. Education is seen as a critical component for economic recovery within the National Development Plan (Plan Sénégal Emergent—PSE).

However, Senegal's education system faces challenges, including low enrollment and completion, low levels of learning achievement, and poor learning conditions. Gross enrollment rates have stagnated for the past decade and remain below SDG and national targets. The primary completion rate stands at 57 percent, and over one-quarter of primary-school-age children are out of school (27 percent).²⁵ A 2017 USAID study²⁶ on out-of-school children and youth in

25 UNESCO Institute of Statistics.

26 USAID. 2017. National Study on Out-of-School Children and Youth in Senegal (Etude Nationale sur les Enfants et les Jeunes Hors du Système Éducatif au Sénégal).

Senegal identifies the following factors as key determinants of falling out-of-school: “sociocultural determinants such as religious beliefs and cultural representations; poverty; household head level of education; remoteness and unavailability of schools; the lack of birth certificate; area of residence; and the presence of emigrant(s) in the household.”²⁷ It is estimated that more than 60 percent of out-of-school children attend Koranic school (daaras), with a significant disparity between regions.²⁸

Despite stubborn barriers to access, some progress has been made regarding education quality. Results from the PASEC regional assessment show that 65 percent of grade 6 children had reached sufficient competency in mathematics and 74.7 percent in reading, a significant improvement from 42.2 percent and 38.9 percent, respectively, in 2014. However, learning levels remain low overall. Learning poverty, which the World Bank calculates as the share of children who have not achieved minimum reading proficiency by age 10, adjusted by the proportion of children who are out of school, remains high at 69 percent.²⁹

Governance in the Education Sector

Sector management is divided among three education ministries³⁰ and multiple sub-directorates and divisions. Ministries and technical departments define, develop, implement, monitor, and evaluate education policies. At the local level, local authorities (school heads, municipalities, assemblies, local councils, and mayors) support the achievement of national objectives through the development of various locally relevant plans, such as Departmental Development Plans (PDDs), Communal Investment Plans (PICs), and Local Development Plans (PLDs). School Inspectorates (IAs) and Education and Training Inspectorates (IEFs) mediate between the central level and local agents, and coordinate education activities by region and district.

Development partners active in the education sector work under the coordination of the Coordinating Agency of the National Education and Training Partners Groups (Groupe national des partenaires de l'éducation et de formation - GNPEF), which serves as a platform for

27 Diagne, A., Diallo, S., Diagne, S., & Henovi, C. (2022). Spotlight on basic education completion and foundational learning: Senegal. Paris: UNESCO.

28 World Bank. (2022). Senegal Project for the Improvement of Education System Performance. *Project Appraisal Document*. Report No: PAD4623

29 World Bank. (2022). Senegal: Learning Poverty Brief. Washington, DC: World Bank.

30 The Ministry of Education (MEN) is in charge of pre-primary through secondary as well as adult basic education; the Ministry of Vocational Training, Apprenticeship, and Social Integration (MFPAL) is in charge of TVET; and the Ministry of Higher Education, Research, and Innovation (MESRI) is in charge of tertiary education

dialogue and coordination for supporting the government during the design, development, implementation, monitoring, and evaluation of sector-related actions.

Table 2. Basic Education Government Stakeholders

Institution	Role
National Level	
Ministry of National Education (MEN)	Prepares and implements education and training policies that are defined by the head of state. It oversees public education management and the preparation and application of private education policy from preschool to general secondary
Directorate of Elementary Education (DEE)	Manages remedial interventions and formative assessment at the school level
Directorate of Educational Planning and Reform (DPRE)	Provides leadership at the strategic level and produces statistical data, aside from learning data.
Directorate of Literacy and National Languages	Develops strategies to eradicate illiteracy, train trainers, and monitor and coordinate all literacy and training activities in the country.
Directorate of Daaras	Manages the modernizing and integrating of daara schools into the formal education system; Supports the pedagogical design and institutional assessment of daaras.
National Research and Action Institute for Education Development	Boosts and coordinates all necessary actions for the development of education. Participates in collecting data to manage and assess education programs.
Institut National d'Études et d'Action pour le Développement de l'Éducation (INEADE)	Conducts evaluations to measure learning outcomes and to evaluate and develop textbooks as a Semi-autonomous agency.
Decentralized Levels	
Academy Inspectorate (IA)	Coordinates educational activities (from pre-primary to high-secondary) by region.
Centres régionaux de formation des personnels de l'éducation (CRFPEs)	Responsible for the initial and continued training of preschool, primary, and middle school teachers, non-formal education staff, and administrative and technical staff as Regional education staff training centers (there is a CRFPE in each region. The MEN's Direction de la Formation et de la Communication (Training and Communication Department) ensures coordination of the centers).
Local and regional authorities	Act III on decentralization was implemented in 2013 to eliminate territorial inequality. Senegal's local administrative divisions comprise 14 regions divided into 45 departments and 550 municipalities.

Source: Diagne, A., Diallo, S., Diagne, S., & Henovi, C. (2022). *Spotlight on basic education completion and foundational learning: Senegal*. Paris: UNESCO; USAID. (2021). *Learning Assessment Data Case Study: Senegal*.



Sector Priorities and Data Strategies

In line with this commitment to improvement, the education sector has undertaken significant reforms to achieve improved quality, equal access, and inclusive and effective governance. The 2013-2025 sector plan (the Programme d'amélioration de la qualité, de l'équité et de la transparence (PAQUET)) and its revision (PAQUET-EF 2018-2030) outline eight priorities to improve education quality:

- “(i) pursue universal basic education for all citizens;
- (ii) adapt vocational and technical training in partnership with the private sector to meet the needs of an emerging economy;
- (iii) improve the quality of teaching and learning;
- (iv) promote and develop the teaching of science, technology, and innovation;
- (v) decentralize the management of education programs for more effective, efficient, and inclusive governance; (vi) strengthen the education sector’s efficiency;
- (vii) enhance the productivity of teaching and administrative staff; and
- (viii) develop the use of national languages in teaching.”³¹

During this time, the government also decentralized education management to local authorities (Act III of the decentralization law, adopted in 2013), which placed greater emphasis on results-based management and accountability for achievement against specified indicators.

Within these frameworks, the government and development partners established the National Education Information and Management System (SIMEN) to ensure the availability of timely, relevant, reliable, and complete programming data. Implementation strategies have included:

- i) building the technical capacities of staff responsible for planning, monitoring, evaluation, and statistics in data production, processing, and use;
- ii) providing facilities with digital infrastructure and equipment (computers, servers, smartphones, GPS, etc.);

31 World Bank. (2022). Senegal Project for the Improvement of Education System Performance. *Project Appraisal Document*. Report No: PAD4623

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- (iii) developing digital tools for data collection and processing (software, applications);
 - (iv) pooling resources (statisticians, planners, teaching staff for data collection and processing);
 - (v) extending the Internet network to connect all schools and universities, daaras, and higher education institutions; and
 - (vi) creating interfaces and connections between sub-systems.



Data Supply

There are two forms of education sector reporting in Senegal: annual performance reports (APRs) by sub-sector against PAQUET indicators, which MEN then compiles into a single sector-wide performance report, and national education sector reports (RNSE), which is an annual report on the state of education in the country for monitoring the Plan Sénégal Émergent (PSE). These statistical yearbooks have been produced regularly, with issues available from 2012.

The Ministry of Education's Education Planning and Reform Department (DPRE) is responsible for data-related activities, including collection, analysis, and sharing. Reports are fed by data from statistical campaigns carried out at the beginning of each year. Matrices and questionnaires are sent from the centralized level to local authorities for completion, sometimes configured on tablets to facilitate data collection, though internet connections are unstable or unavailable in some areas. Agents at the decentralized level (IAs and IEFs) fill in the questionnaires and forms and send them to the SIMEN platform. This data is then sent to the Ministry of Education via SIMEN and used by the DPRE for monitoring and planning. SIMEN provides a coordinated system of dashboards that are tailored for data input for school principals, inspectorates within the IA and IEFs, and departments and institutes at the central level responsible for planning.³² SIMEN incorporates seven applications³³ designed to capture information on school infrastructure, enrolment, learner characteristics (i.e., gender, disabilities), financing, and information on teachers and non-teaching staff.

32 World Bank. (2023). Quality Improvement and Equity of Basic Education Project. Implementation Completion and Results Report. Report No: ICR 00006097. Accessed: <https://documents1.worldbank.org/curated/en/099164502072326985/pdf/BOSIB0098ddae802e08b550758f1cf94e18.pdf>

33 PLANTE; STATEDU; GePS; GREEN; MIRADOR; FINPRONET; BATIMEN. See: <https://www.education.sn/fr/standard/82>

Overall, education data appear widely available, well-organized, and regularly published and disseminated. According to stakeholders, SIMEN's success is primarily the result of strong political will to have a comprehensive and efficient data collection system, the availability of financial, material, and human resources to ensure its operation, and a long-standing culture between the central government and development partners on sharing experiences and best practices. For instance, planners have been appointed in all IAs and IEFs and are responsible for organizing and coordinating data collection.

Government stakeholders expressed broad satisfaction with data availability, with room for improvement. To access data from SIMEN, departments must send data requests directly to DPRE. Stakeholders expressed that this was a short process, and requests are often processed in less than a week. Additionally, users were unanimous in describing the ease of using data for analysis, as data is shared in Excel from the SIMEN platform. This is echoed in a previous GPE assessment that found Senegal to have “robust systems of and capacities for data collection and the production of relevant statistics.”³⁴

However, some stakeholders expressed a need for more types of data to better meet their decision-making needs. For example, data on promotion, repetition, pupil drop-out, as well as data on the contribution of households to children’s education and the contribution of local authorities, are incomplete or delayed, and data on children with disabilities are a proxy that may not provide an accurate picture of the school population of disabled children. Additionally, CSO and development partner stakeholders expressed dissatisfaction with data quality, frequency, and level of disaggregation. For instance, some stakeholders stated that obtaining data in the non-formal sector was difficult.



Data Demand and Use

Trust in data accuracy was shown by stakeholders' satisfaction in using data for their work. Stakeholders mentioned using SIMEN data at the highest levels to “plan and implement action plans,” “make decisions for the various actions under the PAQUET to be effective and efficient,” “highlight the progress that has been made and the challenges that need to be addressed in the coming years,” and “show which schools are areas are performing well and which are not, and to take corrective actions.” SIMEN also enabled specific decisions and policies at local

34 GPE. (2022). Report of the Provisional Independent Technical Advisory Panel (ITAP). Accessed: <https://www.globalpartnership.org/node/document/download?file=document/file/2022-06-senegal-itap-report.pdf>

levels, including determining the number of manuals to produce, identifying the profiles of learners leaving daaras, and developing corrective actions and policies to correct the under-performance of students in French and mathematics. In specific illustrations of use cases for data, respondents shared that data analyses were used to:

“Convince the local authorities in Matam IA and IEF to open a new Franco-Arabic secondary school so that pupils would not have to travel 30 km to another area,”

“Detect anomalies” of “teachers working fewer hours than expected or required” and decide that teachers should use at least 80 percent of their time,

“Convince the authorities to make investments in the [science] sector” by building additional schools and developing a national strategy for promoting math and sciences, to correct low attendance in the sciences.

However, while data is used in planning, developing action plans, and redirecting activities, the absence of data from different sub sectors has hindered better decision-making. When asked whether there were instances when they wanted to use data in their work but were unable to, stakeholders mentioned that incomplete and delayed data make some decisions difficult. For instance, “as part of the evaluation of students’ under-performance, we do not have data on teachers and parents, which can influence students’ performance.” Or “the lack of data, in particular the number of daaras in each region, has prevented us from sharing the financial resources accounting for 20 percent of the funds from local authorities earmarked for daaras.”

Stakeholders also expressed challenges associated with generating sustained demand for data, reducing the reporting burden at school levels, and communicating the existing and potential value of data for education outcomes. For instance, while data is considered largely reliable once published, stakeholders expressed a lack of understanding of the reasoning for collecting data. Tracking indicators can sometimes lead to false data that must be corrected at the central levels, drawing negative attention to the source and requiring additional time and resources to rectify. According to one respondent, data suppliers can perceive data collection initiatives “as a means of punishment or sanction,” leading “those responsible for the collection [of data] to post information that is favorable to them.” Additionally, stakeholders pointed to certain types of data being collected but not used for decision-making, such as data on inclusion and disability-related data.

A Comparison of Data Ecosystems




A data ecosystem includes the demand, supply, and use of data, and a healthy data ecosystem utilizes effective governance mechanisms and incentives to promote data-driven decision making. In a functioning ecosystem, the right data is in the right hands at the right time impacts decision-making. When any element falls short, the potential of data to improve results also falls short. The following determinants influence the smooth functioning of a data ecosystem:

- **Behavioral determinants, including the skills and incentives of data stakeholders.** At the data collection stage, teachers and school administrators need to be able to identify the required information, the reasoning behind the selection and measurement of indicators, and the technical skills to use devices, software, and the internet to consistently produce high-quality data and school records. Stakeholders also need data insight skills (i.e., drawing accurate conclusions) and the ability to apply those insights to make decisions among an array of complex needs and options. This also includes adequate incentives and motivation to adopt new technologies and data collection processes without overburdening data suppliers.
- **Technical determinants, including data standards, system architecture and data collection processes.** All indicator definitions and data measurement methodologies must be sufficiently robust (including data validation activities) and disaggregated to ensure accuracy and enable comparisons over time and within/across populations and geographies. Additionally, data collection requires sufficient software, hardware, and connectivity; data storage must be secure; and interfaces should be user-friendly and provide tailored and comprehensive reports and insights.
- **Organizational determinants, including political economy considerations related to how the data ecosystem is structured, how roles and mandates are distributed, and how resources are divided.** Clear national policies and

protocols are necessary to institutionalize and adequately resource data systems, and governance frameworks are required to ensure mandates and responsibilities are coherent and non-duplicative. Data demand can be stimulated by pairing data access with the ability to act; this means having the necessary discretion and resources to empower decisions and ensuring that accountability systems and the distribution of resources do not inadvertently penalize data collectors, sharers, or users.

The following table summarizes the status of these determinants in each country:









Table 3. Challenges with the data ecosystem, as identified by key stakeholders

	Kenya	Senegal
 <p>Behavioral</p>	<ul style="list-style-type: none"> - Data suppliers are overwhelmed by redundant requests from MoE, SAGAs, and local offices, which hampers buy-in and motivation to care about data accuracy and value data use - Teachers and Principals have limited IT skills to engage with data collection and processing software - There exists a conservative culture of data management and resistance to change, including incorporating additional processes for data collection/use and adoption of ICT. - National actors have limited data analysis and synthesis skills, including the ability to present data in easy-to-consume formats for decision-makers 	<ul style="list-style-type: none"> - There exists a perception among some stakeholders of data collection as a means of punishment, leading to the falsifying of data in some instances - Data use is not systematically encouraged, meaning not all data collected are used for decision-making
 <p>Technical</p>	<ul style="list-style-type: none"> - Lack of data validation and difficulties with the digital register open the avenue for misrepresentation, misuse, and corruption - Lack of harmonization of indicators and IDs eliminates interoperability of datasets - Limited connectivity at the school level means data is sometimes input manually or over unsafe networks, leading to inaccurate, unsecure, and delayed data 	<ul style="list-style-type: none"> - Limited connectivity at the school level means data is often input manually - Inadequate level of data disaggregation and delays in data availability make it difficult to monitor school performance
 <p>Organizational</p>	<ul style="list-style-type: none"> - Overlapping mandates across MEN, SAGAs, and TSC limit the availability of data - There is an absence of a data sharing framework - Agencies fear ceding ownership over data, owing to either a fear of violating the Data Protection Act or a fear of losing resources 	<ul style="list-style-type: none"> - Certain sub-sectors are left out of the data ecosystem (e.g., daaras and other non-formal institutions)

RECOMMENDATIONS

◆ Kenya

It is crucial to remember that the same qualities that make data powerful also make it political. Therefore, in Kenya, it is essential to actively engage with political realities, such as the misalignment of incentives for data sharing and use, rather than focusing on solely technical solutions. The following recommendations flow from existing efforts to further strengthen and institutionalize the NEMIS, including the latest education sector plan and the findings of the Presidential Working Party on Education Reform (PWPER).

 <h3>Data Governance</h3>	 <h3>Tools & Resourcing</h3>
<p>Establish a broad education data policy, legal framework, and set of protocols that govern the production and use of education data. These should provide legitimacy, clarity, and coherence around roles and responsibilities, clarify how data management and analysis operate in tandem with data protection and security laws, align incentives for data integration and data sharing, and specify budgeting and human resource requirements.</p>	<p>Strengthen the pipeline of data specialists to boost human resources and develop data analysis competencies. Prioritize data analysis and data synthesis skills in programs aimed at training education specialists and leaders (i.e., capacities to prepare briefs and analytical summaries for key decision-makers).</p>
 <h3>Data Governance</h3>	 <h3>Tools & Resourcing</h3>
<p>Implement protocols for data sharing that do not require providing full, online access to databases (e.g., using password protection, digital stamps, and other security measures), including protocols for actors outside of government.</p>	<p>Review data collection, processing, and validation tools to prioritize the accuracy and reliability of data and to prevent misuse</p>
 <h3>Data Standardization</h3>	 <h3>Tools & Resourcing</h3>
<p>Harmonize individual school IDs and continue investment in an integrated learner database with identifiers that endure through the education lifecycle of a student</p>	<p>Review data collection, processing, and validation tools to prioritize the accuracy and reliability of data and to prevent misuse</p>
 <h3>Tools & Resourcing</h3>	 <h3>Data Standardization</h3>
<p>Take stock of current and potential use cases for NEMIS data at the data collection level and make this data accessible (e.g., schools using data for feeding programs, teachers using data to communicate with parents, etc.). This can help ensure that NEMIS data serves multiple users and incentivizes accurate reporting.</p>	<p>Harmonize indicators across ministries and SAGAs to relieve the burden on data collectors and create a communication strategy to clarify how this data is being used.</p>

◆ Senegal

In Senegal, where resources are scarce and there is minimal demand for extra data, it is important to focus on stipulating and sustaining demand for data by making data use a norm and educating everyone in the system about the importance of collecting, analyzing, and using data. Thus, efforts should avoid increasing the complexity of data collection and processing. Although both data suppliers and users need more training, Senegal should start with training on data systems that are relevant to everyday decisions or areas that the government has prioritized. This will increase the likelihood of data being used regularly and continuously, even when there are changes in staffing.



Stipulate demand

Strategically place statisticians and analysts in decentralized education departments where timely data is more accessible. Promote visibility and demand for data-informed planning. While data may be basic, descriptive data can still inform district and local officials about teachers, learning materials, school sites, student attendance patterns, etc.

Maximize the perceived value of existing datasets and promote additional demand for data by harnessing deeper insights related to data already being used for decision-making. Use, for example, data visualizations, graphics, or data summaries for all schools other than long-form, detailed reports with raw numbers.



Increase capacity

Provide additional training for data producers/users at the national level to conduct data analysis. Provide guidance on how to integrate datasets with external databases (e.g., learning and financial data). Rather than seeking to establish a fully integrated and interoperable data system, integration should be addressed sequentially and according to current priorities.



Meet information needs

Institutionalize systematic data collection by issuing an administrative note. Assign a budget line for data collection and analysis. This will motivate the creation of a clean, reliable, and valid list of all schools in the country.

Increase the scope of data collection efforts and statistical campaigns. Include non-formal education providers and daaras



Reduce reporting burden

Prioritize improving connectivity Prioritize this over investing in IT hardware and resources



Increase capacity & reduce reporting burden

Provide additional training for data collectors at the school level and develop a pipeline to recruit, train, and support education sector data scientists. In addition to technical skills, training should also include endorsing the benefits of collecting and using data.



CONCLUSION

In summary, despite substantial reforms and investments in national education management information systems (NEMIS and SIMEN), both countries face persistent issues with data governance, incentives for data use, and interoperability across parallel data systems. Kenya and Senegal can improve education data production, sharing, and use by prioritizing data governance, increasing data demand and incentives for use, and building data interoperability standards across data systems. In Kenya, the focus should be on harmonizing data standards, improving data governance mechanisms, and strengthening human resource capacities to support the implementation of the Competency-Based Curriculum and NEMIS. Similarly, Senegal should prioritize increasing data demand through strategic placements of statisticians, reducing the reporting burden, and enhancing training for data collectors and users.

Both countries' experiences offer valuable lessons for other nations seeking to improve the quality and trust in education data. Findings from this research underscore the need for comprehensive education data policies, legal frameworks, and clear protocols to sustain the demand and supply of high-quality education data. As Kenya and Senegal continue to refine their approaches, their progress can serve as a blueprint for other regions facing similar challenges. Ultimately, enhancing education data systems will contribute to better resource allocation, policy planning, and educational outcomes, fostering a more informed and equitable education landscape globally.



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