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EXPLORING THE FOUNDATIONAL LEARNING DATA AND KNOWLEDGE ECOSYSTEM IN SUB-SAHARAN AFRICA

Cameroon's Situational Analysis

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About the Unlocking Data Initiative

The Unlocking Data Initiative is a community of practice that connects African scholars, non-governmental organisations, national statistics offices and policymakers for the purpose of improving access to and use of education data. The '**Unlocking Data: Scaling Uses and Users of Education Data**' project is a collaborative work led by Zizi Afrique Foundation and supported by eBase Africa, EdTech Hub, Education Sub-Saharan Africa and the University of Malawi's Centre for Education Research and Training (CERT). The latter project, which is being implemented in Cameroon, Kenya, and Malawi, aims to scale up uses and users of data to address the knowledge gap of how to adaptively scale up the effective use of existing education data by policymakers and researchers in Africa.

To find out more about us, go to https://unlockingdata.africa/. Our evidence library can be found at https://docs.unlockingdata.africa/lib/.

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Abbreviations and acronyms

CSO	Civil society organisation		
DFID	Department for International Development		
ETSS	Education and Training Sector Strategy		
FLN	Foundational literacy and numeracy		
GEM	UNESCO Global Education Monitoring Report		
IDRC	International Development Research Centre		
INS	National Institute of Statistics		
MICS	Multiple Indicator Cluster Surveys		
MINEDUB	Ministry of Basic Education		
MINEPAT	Ministry of the Economy, Planning and Regional Development		
NDS	National Development Strategy		
NGO	Non-governmental organisation		
NWR	North West Region		
PASEC	Programme for the Analysis of Education Systems		
SIGE	Système d'Information pour la Gestion de l'Éducation		
UNESCO UIS	UNESCO Institute for Statistics		
WDI	World Development Indicators		

Executive summary

This situational analysis is part of the Unlocking Data Initiative, a multi-country effort aimed at scaling the use and utility of education data in sub-Saharan Africa, with a focus on foundational learning implemented in Cameroon, Kenya, and Malawi, the initiative seeks to bridge knowledge gaps and enhance evidence-based policymaking. This report provides a comprehensive review of the foundational learning data ecosystem in Cameroon, focusing on key data sources, stakeholder interactions, and gaps in data management and utilisation. The findings aim to guide future strategies for building a robust and inclusive education data system.

Objectives of the situational analysis are:

- Identify and document key stakeholders in the foundational learning data ecosystem.
- Map existing data sources, systems, and similar initiatives in Cameroon.
- Evaluate policies and guidelines governing foundational learning data collection, sharing, and utilisation.
- Analyse how evidence flows between stakeholders and identify challenges and opportunities.
- Understand the data needs of national institutions to inform education policy and implementation.

The study employed a mixed-methods approach, combining desk reviews, systematic literature searches, stakeholder consultations, and primary data collection. Key data sources included government reports, international datasets, and academic publications. Stakeholder consultations involved workshops, key informant interviews, and focus group discussions with representatives from government, non-governmental organisations (NGOs), researchers, school administrators, and local communities. This comprehensive methodology ensured a nuanced understanding of the data ecosystem, though challenges such as limited access to proprietary databases and infrastructural constraints were noted.

A careful examination and consideration of available information led to the following key findings:

1. Foundational learning in Cameroon

- Foundational learning, encompassing basic literacy and numeracy, is recognised as 'basic education' under Cameroonian law and policies, including the Constitution and the National Development Strategy.
- Despite strong legal and policy frameworks, significant gaps exist in implementation, particularly in addressing regional disparities and marginalised populations.

2. Data and data systems

- National systems such as the SIGE (Système d'Information pour la Gestion de l'Éducation), Cameroon's sectoral education management information system and the *Annual Statistical Book* serve as primary data repositories, but face challenges like inconsistent formats, limited accessibility, and outdated reporting.
- International data systems, including the Programme for the Analysis of Education Systems (PASEC) and the Multiple Indicator Cluster Surveys (MICS), provide broader contextual insights but lack integration with national systems, limiting their applicability for localised decision-making.

3. Knowledge production

- A significant research gap exists in numeracy-focused studies, with most publications emphasising literacy.
- Geographically, foundational learning research is concentrated in the Far North and Centre regions, reflecting their status as educational priority zones and administrative hubs.

4. Stakeholder engagement

- The FLN evidence ecosystem includes diverse actors, but fragmentation and mistrust hinder effective data sharing and utilisation.
- Community-level stakeholders, such as parents and local leaders, are underutilised in evidence generation.

The findings underscore the need for an integrated, inclusive, and accessible data ecosystem to address systemic gaps in foundational learning in Cameroon. Key recommendations include:

- **Building capacity**: Invest in training stakeholders, including school administrators, teachers, policymakers, data managers, parents, students, NGOs, information technology (IT) specialists, education inspectors, local government representatives, community leaders, and development partners, at all levels, to enhance data collection, management, and analysis skills.
- **Strengthening infrastructure**: Address infrastructural deficits, particularly in rural areas, to improve data reliability and timeliness.
- **Promoting integration**: Develop a unified framework that bridges silos between national and international data systems, fostering collaboration and trust among stakeholders.
- Enhancing openness: Advocate for open data policies that improve access while safeguarding data security and privacy.

Addressing these challenges will allow Cameroon to unlock the full potential of its education data, foster evidence-based decision-making, and advance foundational learning outcomes. These steps are critical for scaling the uses and users of education data, ultimately driving better educational outcomes for all.

Related situational analyses from the Unlocking Data Initiative

The Unlocking Data Initiative has published two further situational analysis reports from Kenya ([†]Gachoki & Arisa, 2025) and Malawi ([†]Kadzamira et al., 2025), as well as a political economy analysis on all three countries ([†]Moustafa et al., 2025). Full bibliographic details are included at the end of this report. Clicking the in-text citations included here will take you directly to the Unlocking Data Evidence Library, where all the reports are accessible.

1. Introduction

This report has been developed within the framework of the Unlocking Data Initiative, a multi-country effort to enhance the accessibility, utilisation, and impact of education data in sub-Saharan Africa. As part of the first phase of researching pathways to scale this initiative, this situational analysis aims to provide a detailed understanding of the foundational learning data ecosystem in Cameroon. By examining the state of evidence, identifying data sources, mapping stakeholder interactions, and analysing gaps and opportunities, this report lays the groundwork for building a more effective and inclusive data ecosystem. The findings will inform subsequent phases of the initiative, driving actionable strategies to scale up the use of evidence for improved educational outcomes.

1.1. Background

Substantial evidence demonstrates the wider benefits of education, such as increasing productivity, improving health status, and reducing crime rates, thereby driving income growth and economic development (*Lance*, 2011). Foundational learning — essential skills that underpin broader educational outcomes — are critical for individual and societal progress (*Azevedo et al.*, 2022). However, global data highlights significant deficiencies, with approximately 250 million children unable to acquire basic reading and maths skills despite increasing school enrolment (*Stone et al.*, 2020).

In sub-Saharan Africa, foundational learning outcomes are particularly dire. Only one in five children complete primary school with minimum proficiency, and over 97 million remain out of school (*UNESCO GEM Team et al., 2022). Among those enrolled, nine out of ten pupils cannot read and understand a simple text by the end of primary school (*Azevedo et al., 2022). These challenges disproportionately affect marginalised groups such as girls, children with disabilities, and Indigenous populations, with gender disparities in school access, retention and literacy further exacerbating inequalities (*United Nations, 2018). Furthermore, adverse conditions, including poverty and conflicts, worsen access and quality, with 15 African countries experiencing school instability due to military crises between 2015 and 2019 (*UNESCO GEM Team et al., 2022).

Cameroon faces numerous similar regional educational challenges. Its education system is uniquely structured with two subsystems: the Anglophone subsystem, where English is the medium of instruction, and the Francophone subsystem, which uses French ([°]Crouch, 2019). While this bilingual framework offers the potential for cultural and linguistic diversity, it also exacerbates disparities in curricula, governance, and resource allocation, intensifying regional inequalities and tensions. These disparities were further magnified by the Anglophone Crisis, which, by 2019, had displaced over 855,000 children and led to the closure or destruction of more than 80% of schools in the Northwest and Southwest regions ([°]UNICEF, 2019). Despite efforts to expand access to

education, learning outcomes in Cameroon remain critically low. Approximately 72% of children cannot read fluently by age 10, underscoring a severe national learning crisis (*Azevedo et al., 2022). Addressing these challenges requires urgent, evidence-based interventions.

Building a robust evidence ecosystem is essential for identifying effective solutions, guiding resource allocation, and minimising inefficiencies, thereby fostering sustainable improvements in educational outcomes. Cameroon's education system suffers from a scarcity of comprehensive data on past trends, undermining the country's ability to meet its educational targets (¹UNICEF, 2019). Foundational learning data is crucial for informing policies and practices. The Ministry of Basic Education (MINEDUB) oversees systems such as the 'School Map' and Cameroon's sectoral education management information system known as SIGE (Système d'Information pour la Gestion de l'Éducation), which collects data from public, private, and non-formal educational institutions (¹Crouch, 2019) and (¹UNICEF, 2019). Despite these initiatives, significant gaps persist in data availability, quality, and integration, limiting the effectiveness of evidence-based policymaking (¹Azevedo et al., 2022).

1.2. Research questions and objectives

Aim of the study

This study aims to provide a comprehensive understanding of the state of foundational learning data collection, management, sharing, and utilisation in Cameroon. It includes mapping data and stakeholders at national and subnational levels, identifying gaps and needs, and mapping existing initiatives, policies, and guidelines governing the education sector.

Specific objectives

The study's specific objectives are to identify key stakeholders within the foundational learning data ecosystem, including what data they collect, the types of indicators they use, and their potential to influence the use of evidence in foundational learning policies. Specifically, the study seeks to achieve the following objectives:

- 1. Identify and document existing foundational learning data sources, data systems, and similar mapping initiatives in Cameroon.
- 2. Identify and evaluate existing policies and guidelines regarding the collection, management, sharing, and use of foundational learning data.
- 3. Identify the needs of different national institutions regarding data to better inform their education policies, design, and implementation.
- 4. Analyse how evidence flows between stakeholders in the foundational learning ecosystem and identify gaps, challenges, and opportunities in data access, sharing, and utilisation.

1.3. Report structure

This ecosystem mapping report is structured into five sections, including this introduction (Section 1). Section 2 outlines the methodology adopted, especially for searching and analysing data and data sources. Section 3 presents the findings, while Section 4 maps stakeholders and how evidence flows between them in the ecosystem and succinctly highlights the barriers of evidence flow in the ecosystem in Cameroon. The final section, Section 5, proposes recommendations for the ecosystem map.

1.4. Related situational analyses from the Unlocking Data Initiative

The Unlocking Data Initiative has published two further situational analysis reports from Kenya ([†]Gachoki & Arisa, 2025) and Malawi ([†]Kadzamira et al., 2025), as well as a political economy analysis on all three countries ([†]Moustafa et al., 2025). Full bibliographic details are included at the end of this report. Clicking the in-text citations included here will take you directly to the Unlocking Data Evidence Library, where all the reports are accessible.

2. Methodology

The study employed a mixed-methods approach, integrating both qualitative and quantitative research techniques. The approaches included desk reviews, online data searches, systematic literature reviews, document reviews, and data collection through surveys, focus group discussions, and key informant interviews.

2.1. Desk review

A comprehensive desk review was undertaken to map available data, policies, data sources, and similar mapping initiatives in Cameroon. This process involved a three-pronged approach: an online search for available datasets, a systematic search of foundational learning research and initiatives, and a review of policies and guidelines governing foundational learning and data management in Cameroon.

2.1.1. Online search for education datasets

Datasets related to foundational learning in Cameroon were sourced from key institutions, including the Ministry of Basic Education (MINEDUB), the National Institute of Statistics (INS), higher education institutions, non-governmental organisations (NGOs), and international organisations.

1. Education data from MINEDUB and INS

Datasets from MINEDUB and INS were retrieved through their websites and repositories. They were then mapped and documented in a metadata spreadsheet. However, a key limitation was that national statistics offices primarily document data from surveys they are directly involved in. Data from international organisations and private stakeholders was included to achieve a broader scope.

2. Google Dataset Search

Google Dataset Search was used to locate publicly available datasets. A search string combining terms such as "Cameroon", "foundational learning", "early childhood education", and related phrases was employed. Searches were truncated and prioritised using Google's ranking system to manage information overload, with a maximum of three pages screened per query.

3. Microdata from international organisations

Libraries from international organisations such as the World Bank Microdata Library, Afrobarometer, and UNESCO's databases were consulted. These platforms offered access to global and regional education statistics, including the World Development Indicators (WDI) and Education Statistics (EdStats). Additional sources included UNICEF, StatCompiler, and OpenAFRICA.

2.1.2. Screening and eligibility criteria

All types of educational studies conducted in Cameroon on basic education and early childhood education were included, with no restrictions on publication year. Papers in English and French were considered.

Two independent reviewers assessed identified papers, selecting relevant ones and recording data in a metadata spreadsheet. A third reviewer resolved any discrepancies between the initial reviewers' findings.

2.1.3. Systematic search for available evidence on foundational learning in Cameroon

A systematic review of foundational learning research in Cameroon was conducted to complement the dataset search.

1. Databases

The search included academic databases such as EBSCO, ProQuest, JSTOR, Google Scholar, and specialised repositories like the 3ie Development Evidence Portal. These databases offered diverse perspectives and insights into foundational learning.

2. Search terms

Search strings were tailored to each database, using terms like

FLN

("foundation* skills" OR "basic skills" OR "literacy" OR "reading" OR "writing" OR "vocabulary" OR "speech" OR "alphab*" OR "numeracy" OR "math*" OR "arithmetic" OR "calculation" OR "proficiency level*" OR "learning achievement" OR "learning outcome*" OR "learning level*" OR "learning gain*" OR "learning loss*" OR "cognitive skills")

AND

("basic education" OR "early grade" OR "elementary school*" OR "primary school*" OR "primary education" OR "second chance" OR "alternative education" OR "complementary education" OR "accelerated learning" OR "non-formal education" OR "primary-age*")

AND

("Cameroon")

Refinements were made to account for each database's formatting requirements.

3. Grey literature search

A grey literature search was undertaken to capture unpublished and data sources. This involved:

- Customised Google Searches: Specific queries targeted documents and reports published on organisational websites.
- Targeted websites: We reviewed key organisations such as UNESCO, UNICEF, the World Bank, Global Partnership for Education (GPE), MINEDUB, as well as local repositories focusing on foundational learning in Cameroon.
- Hand searches: Libraries at the ten state universities in Cameroon were searched for unpublished studies and theses.

2.1.4 Inclusion and exclusion criteria

The review included studies on basic education and early childhood development in Cameroon, published in English or French, with no restriction on publication year. Two independent reviewers screened the studies, and a third reviewer resolved any discrepancies.

2.1.5 Document review

We reviewed policies, guidelines, and strategic plans related to foundational learning data collection and sharing in Cameroon. This exercise provided critical insights into the regulatory frameworks and practices underpinning the FLN data ecosystem. We integrated these findings with stakeholder interviews and secondary data analysis, enabling a comprehensive understanding of the current state of foundational learning data in Cameroon.

2.2. Stakeholder consultations and primary data

The stakeholder consultation process employed purposive and snowball sampling strategies to ensure the representation and inclusion of key education stakeholders at both national and sub-national levels. The process began with a co-creation workshop involving ministry officials introducing the Unlocking Data Initiative, aligning with government priorities, and formalising collaboration through a memorandum of understanding (MoU). This workshop provided a platform for ministry representatives to articulate their priorities and for the initiative to embed its objectives within existing government structures and policy frameworks.

Key informant interviews and focus group discussions were conducted with stakeholders across Cameroon's ten regions. Participants included policymakers, researchers, ministry officials, educators, and representatives from NGOs and community organisations. These consultations aimed to address the knowledge gap on scaling up

the effective use of existing education data, particularly foundational learning data for children aged 4–10 years. Sessions were designed to provide a comprehensive outlook on education data collection, management, sharing, and utilisation while identifying gaps, challenges, and opportunities. The structure of the sessions included guided discussions to explore existing practices, challenges, and stakeholder needs, ensuring actionable insights to strengthen the ability of policymakers and researchers to utilise data effectively at scale.

Activity type	Stakeholder group	Number of participants (male)	Number of participants (female)	Total number of participants
Workshop	Ministry of Education (national and sub-national)	7	3	10
	NGO / donor / CSO*	1	0	1
Key informant	Ministry of Education	10	2	12
interviews	Donor / NGO / CSO	17	2	19
	School administrators	10	2	12
	Researchers	13	6	19
	Local administrators (Councils)	11	1	12
	Community leaders	7	1	8
	Teachers	0	2	2
	Parents	0	3	3
Focus group discussions	Heterogeneous groups	15	11	26
Total number of participants		91	33	124

Table 1: Research participants

Note: Of these participants, 8.8% identified as having a disability and 27% represented rural or remote community settings.

2.3. Limitations

The study faced several limitations that constrained the comprehensiveness of the findings:

- 1. Limited data availability in the public domain: The study used only databases and datasets accessible to the researchers, which narrowed its scope.
- Restricted access to licenced databases: Many key databases, such as Scopus, Web of Science, SAGE Journals, SpringerLink, and OECD iLibrary required licenses, which limited access to potentially critical research output.
- 3. **University research papers not digitised**: Our initial online database search was limited, and we are aware that many relevant academic studies, particularly older or locally published ones, are not digitised. Therefore, we expected to find significantly more relevant papers through manual searches in university libraries.
- 4. **Political climate and suspicions**: The approaching elections in Cameroon created doubts about the research motives, affecting stakeholder engagement and openness.
- 5. **Data sensitivity**: Education data is highly sensitive, and discussions about it were often difficult to facilitate.
- 6. **Pending ratification of key policies**: Although the preschool policy has been developed, it is still awaiting ratification, and this prevented its inclusion in discussions.

3. Key findings: Thematic analysis

This section defines foundational learning in Cameroon, exploring its framing within the concept of 'basic education'. It maps key policies and regulations that govern and guide foundational learning, such as the Constitution of Cameroon, Law No. 98/004, and the National Development Strategy (*MINEPAT, 2020). Additionally, also relying on data from focus group discussions and key informant interviews, it examines the existing data systems, both national and international, that support educational decision-making, highlighting their interplay and the challenges in harmonising data across stakeholders.

3.1. Foundational learning policy framework in Cameroon

In Cameroon, foundational learning is primarily referred to as 'basic education', which focuses on acquiring fundamental skills in reading, writing, and mathematics (*MINEDUB, 2025). The *Education and Training Sector Strategy Paper 2013–2020* (*MINEPAT, 2023) underscores this by stating that the general purpose of education is to train children for their intellectual, physical, civic, and moral development. Basic education encompasses **pre-primary (nursery)** and **primary education**. The Ministry of Basic Education (MINEDUB) is tasked with preparing, implementing, and evaluating state policies concerning this educational segment. This includes the organisation and functioning of preschool and primary education and the development and oversight of curricula and educational standards (*MINEDUB, 2025).

Cameroon's approach to foundational learning is encapsulated within its broader educational policies, emphasising basic literacy and numeracy as essential components of primary education. The nation's commitment to foundational learning is evident through various strategic documents and initiatives aimed at enhancing educational quality and inclusivity. Foundational learning is deeply enshrined in the country's legal and policy frameworks, reflecting a commitment to ensure that all children acquire essential literacy and numeracy skills for personal and national development. The Constitution of Cameroon 1996 (*Government of Cameroon, 1996*) lays the foundation by guaranteeing every child's right to education and mandating compulsory primary education. This constitutional mandate underscores the government's responsibility to ensure equitable access to quality education as a fundamental right.

Building on this constitutional commitment, Law No. 98/004 of 14 April 1998 (Government of Cameroon, 1998) provides the legal framework for the structure and objectives of the education system. The law emphasises the provision of universal basic education, explicitly focusing on foundational learning as critical for nurturing productive, informed citizens. It also delineates roles for various actors in the education sector, fostering collaboration between public and private entities to achieve these goals.

The Growth and Employment Strategy Paper (GESP) 2010–2020 (*MINEPAT, 2010) expands on these principles by linking education to broader socio-economic objectives. It

recognises foundational learning as a cornerstone of human capital development, essential for boosting economic productivity and employment opportunities. The GESP identified gaps in educational infrastructure, teacher quality, and resource availability, proposing targeted interventions to address these issues.

In continuity, the *National Development Strategy (NDS) 2020–2030* (*MINEPAT, 2020) builds on GESP's objectives, prioritising education as a driver of inclusive growth and structural transformation. The NDS emphasises strengthening foundational learning to address systemic inequalities and align educational outcomes with labour market demands. By investing in teacher training, curriculum development, and community engagement, the strategy seeks to create a robust foundation for lifelong learning.

Complementing these broad frameworks are policies like the National Textbook Policy, which ensures access to quality instructional materials, and the implementation of a competency-based curriculum, which fosters critical thinking and practical skills from the early stages of education. The inclusive education policies (Tchombe, 2012) ensure that foundational learning opportunities extend to all children, including those with disabilities and marginalised communities, further demonstrating Cameroon's commitment to equitable access.

Cameroon's ongoing commitment to ensuring inclusive, equitable quality education for all is evident in the formulation of the *Education and Training Sector Strategy (ETSS)* 2020–2030 (*MINEPAT, 2023), which builds on the lessons of previous strategies. This comprehensive roadmap emphasises achieving the UN's Sustainable Development Goal 4 (*UNESCO, 2017) by promoting quality, equity, and efficiency in the education system. Additionally, a preschool policy has been developed to strengthen early childhood education and provide a foundation for successful learning trajectories. Both the ETSS 2020–2030 (*MINEPAT, 2023) and the National Preschool Policy are awaiting ratification and will be pivotal in shaping the future of foundational learning.

These forthcoming policies signal the continuation of Cameroon's efforts to address persistent challenges and elevate its education sector to meet evolving national and global demands. Their ratification and implementation will be explored in subsequent publications, offering insights into how they will refine and strengthen foundational learning in Cameroon.

The study of these policies highlights significant gaps in Cameroon's inclusive education policies. While the policies aim to also address gender and inequalities, their effectiveness is undermined by unclear implementation strategies, lack of awareness among educators, and inadequate resources like Braille materials and sign language interpreters.

While Cameroon's education policies aspire to inclusivity and address gender inequalities, its efficacy is hampered by critical gaps in implementation. Despite aiming to provide equitable access and learning experiences, the policies lack clearly defined

implementation strategies, hindering effectiveness on the ground. Furthermore, a lack of awareness and understanding of inclusive practices among educators, coupled with inadequate resources and support systems, such as accessible learning materials and qualified personnel like sign language interpreters, further exacerbate these challenges. This disconnect between policy aspirations and practical realities presents a significant obstacle to achieving a truly inclusive education system in Cameroon.

Table 2. Foundational learning policies

Policy / Legal framework	Summary		
Constitution of Cameroon (1996) ([†] Government of Cameroon, 1996)	Guarantees the right to education, mandating compulsory primary education to ensure foundational learning for all children.		
Law No. 98/004 of 14 April 1998 (*Government of Cameroon, 1998)	Establishes guidelines for education, emphasising universal access to quality basic education and outlining the structure of the educational system.		
Growth and Employment Strategy Paper (GESP) 2010–2020 (*MINEPAT, 2010)	Focuses on economic growth and employment, highlighting the role of education in human capital development and the need to improve educational infrastructure and quality.		
National Development Strategy (NDS) 2020–2030 (*MINEPAT, 2020)	Aims for structural transformation and inclusive development, prioritising human capital development through enhanced access to quality education and vocational training.		
Education and Training Sector Strategy Paper (ETSSP) 2013–2020 ([*] MINEPAT, 2013)	Provides a roadmap for Cameroon's education reforms, focusing on access, equity, quality, and governance in the education sector.		
Education and Training Sector Strategy (ETSS) 2023–2030 (*MINEPAT, 2023)	Builds on earlier strategies to emphasise quality education, equitable access, and labour-market alignment for sustainable development.		
National Textbook Policy (†MINEDUB, 2015)	Ensures the provision of quality educational materials aligned with the national curriculum to support effective foundational learning.		
Inclusive Education Policies (Tchombe, 2012)	Promotes access to education for all children, including those with disabilities, ensuring that foundational learning is inclusive and equitable.		
Law No. 2010/002 of 13 April 2010 (†Government of Cameroon, 2010a)	Provides for the protection and promotion of persons with disabilities, including their right to access education, thereby supporting inclusive foundational learning.		
Decree No. 2010/0241/PM of 26 February 2010 ([†] Government of Cameroon, 2010b)	Transfers certain educational competencies to local councils, enhancing local governance and community involvement in the management of basic education.		

3.2. Data and data systems

Data systems are crucial in shaping educational policies, monitoring progress, and making evidence-based decisions to enhance foundational learning. These systems exist at both national and international levels and play complementary roles in collecting, analysing, and disseminating data on literacy, numeracy, teacher performance, and school infrastructure. Accessibility is a key feature of these systems, defined here as the ease with which stakeholders, including policymakers, educators, researchers, and the public, can obtain and use data for planning and evaluation purposes.

At the national level, SIGE serves as Cameroon's primary data management system, integrating statistics from all education and training sub-sectors into a holistic platform. It collects data on student enrolment, teacher qualifications, and school infrastructure, generating reports to support decision-making. The *Annual Statistical Book* also provides a yearly summary of educational indicators. These systems aim to centralise and streamline data management but face challenges such as delays in data entry, inconsistent formats, and limited technical capacity at the local level. Additionally, access to key resources like the School Map, which contains geospatial data on schools, is restricted to government use, while SIGE data requires formal requests, and the *Annual Statistical Book* offers only summarised information. These restrictions, while ensuring data management and security, may limit broader access for researchers, NGOs, and other stakeholders, potentially hindering evidence-based decision-making. Expanding access and addressing these challenges could enhance data-driven strategies to improve foundational learning outcomes in Cameroon.

Internationally, Cameroon participates in initiatives like the Programme for the Analysis of Education Systems (PASEC)¹ and the Multiple Indicator Cluster Surveys (MICS).² PASEC evaluates student outcomes in literacy and numeracy in early grades, offering cross-country comparative insights. MICS, facilitated by UNICEF, provides broader data on child well-being, including educational outcomes, and is accessible via publicly available reports and databases. While international systems are more open, they may not align perfectly with national indicators, creating challenges in data harmonisation.

Table 3 below showcases a mix of national and international data systems that play pivotal roles in providing essential information on foundational learning in Cameroon. National systems such as SIGE and the *Annual Statistical Book* serve as critical tools for local policymaking, offering detailed insights into school-level operations and educational performance. However, these systems often have restricted access, which limits their usability for external stakeholders, including researchers and civil society organisations (CSOs) and mainly contain administrative data.

¹ See https://pasec.confemen.org/en/#. Retrieved 23 January 2025.

² See https://mics.unicef.org/. Retrieved 23 January 2025.

Table 3	Summary	of data systems
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Organisation	Data system	Type of data	Accessibility	Restrictions
MINEDUB	School Map	Geospatial data on schools and infrastructure	Limited to government use	Restricted to policymakers; public access is minimal.
MINEDUB	SIGE (Education management information system)	Enrolment, teacher data, infrastructure	Limited to government use	Requires formal requests; data may be delayed or incomplete.
MINEDUB	Annual Statistical Book	National educational indicators	Public with limitations	Only summarised data; full datasets not openly available.
PASEC	Programme for the Analysis of Education Systems	Early grade literacy and numeracy performance	Public	Reports only; raw data access restricted to partners.
UNICEF	Multiple Indicator Cluster Surveys (MICS)	Child well-being, including education	Public	Aggregate- level data; customised queries require approval.
UNESCO UIS	UNESCO Institute for Statistics	Global educational indicators	Public	Limited data for small or localised systems in Cameroon.

International systems like PASEC and MICS complement national efforts by delivering broader, standardised insights on educational outcomes and contextual indicators. These systems are generally more accessible to the public, enabling broader stakeholder engagement. Nonetheless, challenges such as restricted access to raw data and difficulties in harmonising national and international metrics may reduce their efficacy in addressing local needs (*United Nations, 2023).

Despite the value offered by these systems, no holistic framework integrates all the data produced across different sources. Insights from stakeholder consultations through key informant interviews and focus group discussions highlight that data generated by researchers and CSOs is often met with distrust or overlooked, despite its potential utility. This underscores the urgent need to develop systems that can bridge silos and integrate diverse data producers while striving to make data more open, credible, and trustworthy. Such efforts are crucial to fostering collaboration and building a robust, unified foundation for evidence-based decision-making in education.

3.3. Knowledge production on foundational learning

This section explores trends in research outputs on foundational learning in Cameroon, highlighting key patterns in publication timelines, thematic focuses, target populations, and geographic and gender representation among lead authors. By analysing these dimensions, we gain insights into the state of research on foundational learning, identifying progress and persistent gaps in the sector.

The reviewed studies reveal variations in focus areas, such as literacy, numeracy, and their intersections, while also examining disparities in grade-level attention and regional emphasis. Over the years, knowledge production on foundational learning in Cameroon has evolved, reflecting shifting priorities, increased awareness of education challenges, and growing research capacity. Despite a growing body of work, the analysis underscores critical gaps, including limited emphasis on numeracy and uneven research distribution across regions and demographics. Understanding these trends is crucial for shaping a balanced, inclusive, and impactful ecosystem that aligns with the diverse educational needs of Cameroon.

3.3.1. Knowledge generation

Publication year

Figure 1 below provides valuable insights into the temporal distribution of research studies on foundational learning in Cameroon. A clear trend emerges, indicating a significant increase in publications in recent years. The period between 2015 and 2020 witnessed the highest number of studies (eight), followed by 2020–2023 with five studies. This suggests a growing interest and recognition of the importance of foundational learning in Cameroon. In contrast, the earlier periods show a relatively low

publication count. Only one study was published before 2000, and three studies were published between 2000 and 2005 and 2005 and 2010. This highlights a historical gap in research on this crucial aspect of education. Several factors may contribute to the recent surge in research. Increased awareness of the learning crisis in Cameroon, a greater emphasis on foundational skills by policymakers and international organisations, and improved research capacity within the country could all play a role.

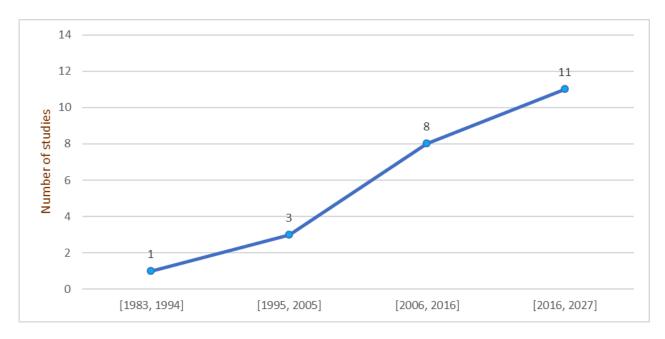


Figure 1. Publication years of research outputs on foundational learning in Cameroon

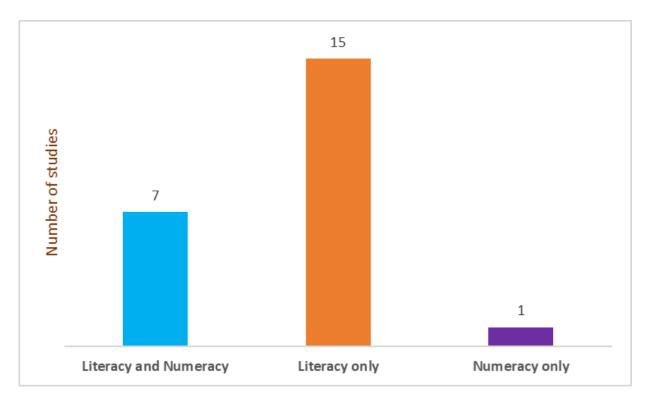
3.3.2. Knowledge production by thematic areas

Figure 2 illustrates a clear emphasis on literacy within the 23 analysed studies related to foundational learning in Cameroon. A significant majority, 16 studies (67%), focused exclusively on literacy. In contrast, numeracy received far less attention, with only one study (4%) dedicated solely to this area. The remaining seven studies (29%) explored both literacy and numeracy, highlighting a recognition of their interconnectedness in foundational learning.

This distribution suggests a potential research gap in the field of numeracy in Cameroon. Similar results appear in the recent work by ¹Lawson et al. (2024) for Ghana, Senegal, Kenya, and Tanzania. While literacy is undoubtedly critical, a balanced focus on both literacy and numeracy is essential to achieve foundational learning. Further research efforts dedicated to numeracy could help address this imbalance and provide a more holistic understanding of foundational learning challenges and interventions in the Cameroonian context.

Unlocking Data

Figure 2. Focus of study



Further analysis revealed that 17 studies were directly relevant to foundational learning in Cameroon, while seven were indirectly related. Although these indirectly relevant studies provide valuable insights into broader educational contexts or influencing factors, they do not directly address the specific challenges and solutions associated with foundational literacy and numeracy. Further, to our knowledge, there were no studies in Cameroon that focused on socio-emotional outcomes of learners in the early years of education. This highlights the importance of further research focused explicitly on these critical areas to develop targeted interventions and effectively address core issues.

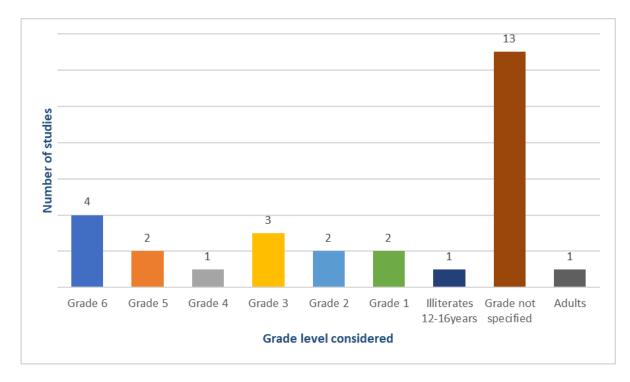
3.3.3. Knowledge production by grade levels

Figure 3 below presents studies categorised by their focus on grade levels or learner groups. Key insights include:

- The largest cluster of studies (13) does not specify grade levels, reflecting a general focus on foundational skills rather than grade-specific interventions.
- Of the remaining studies:
 - Four studies target Grade 1 learners.
 - Three studies each focused on Grades 2, 3, and 5.
 - Minimal attention is given to Grades 4 and 6, with only one study each.

- Studies on illiterate populations (two studies) and adults (one study) suggest some focus on foundational learning beyond formal schooling.
- One study involves learners aged 12–16 years, overlapping with foundational skill needs in older students.

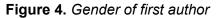
Figure 3. Studies reviewed and grade level involved

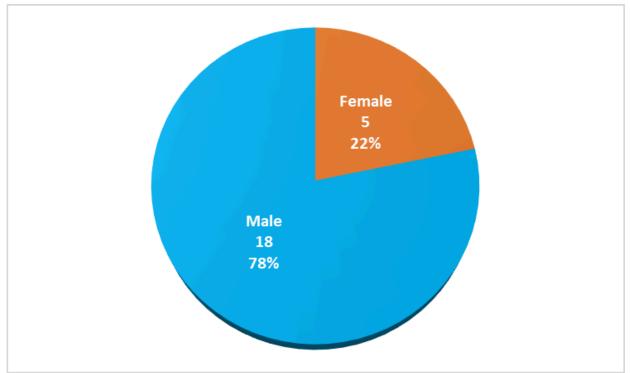


3.3.4. Knowledge production by gender

Figure 4 presents the gender of first authors in the studies reviewed. The distribution reveals a notable disparity, with male authors constituting a clear majority at 79.2%. In contrast, female authors represent a minority, comprising only 20.8% of the total. This gender gap in knowledge production underscores the need for initiatives to encourage and support greater participation of women in research on foundational learning in Cameroon. Promoting gender balance in research can enrich the field with diverse perspectives and contribute to a more comprehensive understanding of the challenges and potential solutions in this crucial area of education.

Unlocking Data



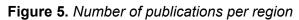


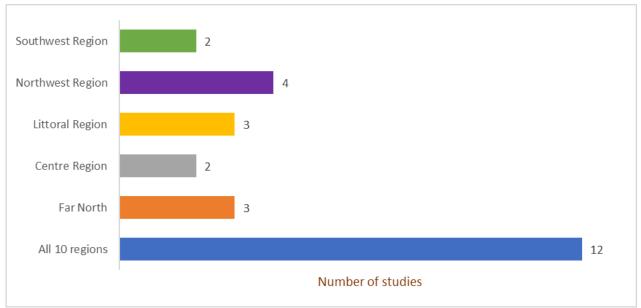
3.3.5. Knowledge production by region

Figure 5 below categorises the number of publications across Cameroon's ten regions:

The highest contribution comes from studies spanning all ten regions collectively, totalling 12 studies, highlighting a significant effort toward nationwide research. Among individual regions, the Northwest Region leads with four studies, indicating relatively higher knowledge production compared to others. The Littoral and Far North regions follow with three studies each, reflecting moderate levels of research activity. On the other hand, the Southwest and Centre regions contribute the least, with only two studies each, showcasing lower engagement in knowledge production. This data underscores notable disparities in research efforts across regions, with some areas significantly underrepresented compared to others. However, and in the overall, knowledge on foundational learning in Cameroon is low and a subject area that needs attention. Thus, there is a need for targeted interventions to enhance knowledge production in regions with lower contributions while sustaining efforts at a national scale

Unlocking Data





4. Stakeholder mapping and evidence flow

The foundational learning evidence ecosystem in Cameroon, as mapped through qualitative interviews and survey data, reveals a complex web of stakeholders engaged in collecting, sharing, and utilising educational data. Insights from qualitative interviews and survey results provide a comprehensive understanding of the system's strengths, gaps, and challenges. This section outlines the dynamics of the foundational learning evidence ecosystem, focusing on demand and supply, use of evidence in decision-making, evidence flow, and systemic challenges. It mainly exploits data from stakeholder surveys, key informant interviews and focus group discussions.

4.1. The evidence ecosystem

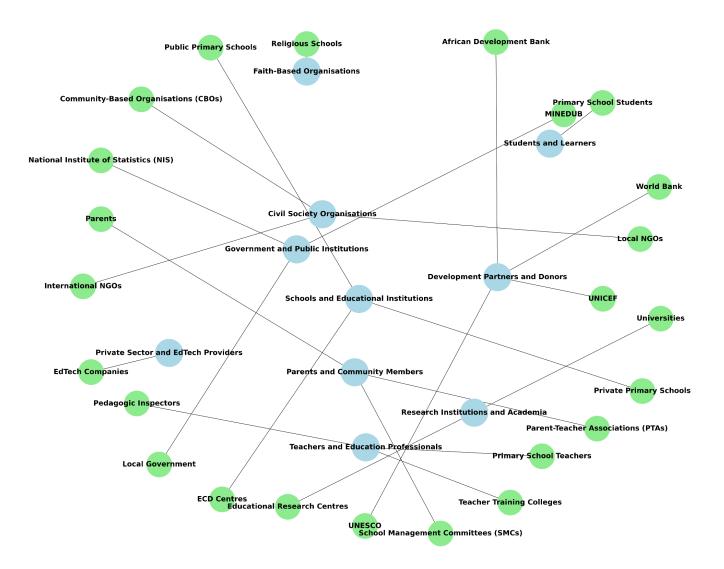
The foundational learning evidence ecosystem encompasses **supply-side** actors, such as schools, researchers, and CSOs, who produce data, and **demand-side** actors, including policymakers, donors, and ministry officials, who use this data to inform decisions. However, the ecosystem operates within a fragmented framework marked by infrastructural gaps, resource limitations, and competing interests.

Learnings from key informant interviews and focus group discussions with education stakeholders reveal that the foundational learning evidence ecosystem in Cameroon faces a complex interplay of supply and demand dynamics, often hampered by systemic challenges. While various actors contribute to generating and utilising evidence, a fragmented framework marked by infrastructural gaps, limited resources, and competing interests hinders the optimal functioning of this ecosystem.

Figure 6 below illustrates the ecosystem of stakeholders involved in the demand and supply of foundational literacy and numeracy (FLN) data in Cameroon. It highlights the interconnected roles of government institutions, schools, teachers, parents, civil society organisations, development partners, the private sector, and academia in shaping the foundational education landscape. Each stakeholder contributes uniquely to the generation, dissemination, and utilisation of data to improve learning outcomes. For example, the Ministry of Basic Education (MINEDUB) leads national policy formulation and data oversight, while teachers and school administrators provide critical classroom-level data. Similarly, parents, through school management committees and parent-teacher associations, can influence data-driven decisions at the community level. This visual representation underscores the collaborative effort required to leverage data effectively for strengthening foundational learning systems in Cameroon

Unlocking Data

Figure 6. Stakeholders in the foundational learning data ecosystem



Supply-side dynamics

As frontline actors in foundational learning, schools serve as primary data suppliers, routinely gathering information on attendance, student performance, and teacher activities. However, limited resources and infrastructure often constrain their capacity to provide high-quality data. As a school head in Adamaoua aptly stated, "We struggle with overcrowded classrooms and lack basic tools like computers, which makes data collection a challenge." This highlights the need for investment in basic school infrastructure and capacity building to ensure reliable data collection at the source.

Researchers and CSOs play a crucial role in supplementing school-level data by conducting targeted studies. Researchers often focus on analysing disparities in foundational learning outcomes and identifying factors that contribute to learning gaps. CSOs, on the other hand, often prioritise generating evidence on marginalised groups, such as girls and children with disabilities. A CSO leader in the Northwest emphasised this focus, stating, "Our studies focus on identifying learning gaps among vulnerable groups, such as girls in rural areas who face higher dropout rates." This illustrates the importance of diverse actors in generating evidence that captures the multifaceted realities of foundational learning in Cameroon.

Demand-side dynamics

Policymakers and donors are the primary consumers of foundational learning evidence, utilising it to shape national strategies, allocate resources, and design effective interventions. However, the demand for evidence often outpaces the supply due to inconsistencies in data availability and quality. A policymaker in the Centre Region highlighted this challenge, stating, "We need real-time data to allocate resources effectively, but delays in reporting often leave us working with outdated information." This underscores the need for timely and reliable data to inform responsive policymaking.

Furthermore, a survey revealed that over 40% of respondents identified "limited access to quality data" as a significant barrier to evidence-based decision-making. This points to a systemic challenge within the ecosystem, where the current supply does not adequately meet the demand for robust evidence.

Emerging dynamics

Despite these challenges, the survey identified emerging trends offering potential solutions. The growing role of digital tools and decentralised data collection methods could help bridge the supply-and-demand gap by improving data quality, accessibility, and timeliness. By leveraging technology and empowering local actors in data collection and analysis, Cameroon can strengthen its foundational learning evidence ecosystem and move towards more evidence-informed decision-making in education.

4.2. Use of evidence in decision-making

Evidence is used differently across stakeholder groups, reflecting their roles, capacities, and priorities. While evidence guides critical decisions, systemic challenges limit its full integration into the decision-making process. In this section, we highlight insights from key stakeholders as expressed in surveys, interviews, and focus group discussions and insights from the qualitative data.

Policymakers

Policymakers rely on aggregated data for resource allocation, curriculum design, and teacher training. However, political interests sometimes undermine evidence-driven decisions.

"Decisions on resource allocation often prioritise political visibility over actual needs, undermining the utility of evidence."

– Policymaker, Adamaoua

Forty-four per cent of policymakers surveyed indicated that evidence informs their resource allocation decisions, but 22% acknowledged that political interference skews priorities.

Researchers

Researchers utilise evidence to evaluate interventions and publish findings that shape educational policies. They emphasise the need for qualitative data to address contextual nuances.

"Quantitative data provides a snapshot, but qualitative insights are essential to understanding systemic barriers like teacher–student dynamics."

- Researcher, East Region

Schools and CSOs

At the local level, schools and CSOs use data to address immediate challenges. Schools monitor attendance and performance to identify at-risk students, while CSOs advocate for inclusive education.

"Attendance data helps us identify children at risk of dropping out and implement targeted interventions."

- CSO Leader, Douala

4.3. Flow of evidence and stakeholder experiences

Evidence flows through both active and passive relationships between stakeholders. The strength and effectiveness of these flows vary depending on formal agreements, institutional capacity, and the level of collaboration.

Active relationships

Formal mechanisms facilitate data flow between schools, regional delegations, and ministries. However, higher education institutions, researchers, NGOs, and CSOs often require formal agreements to access institutional data, which can delay their work.

"Formal data-sharing agreements exist, but approval processes are bureaucratic and slow, delaying timely access to critical information."

- Researcher, Littoral Region

Passive relationships

Informal data-sharing occurs between community leaders, parents, and CSOs. While these relationships provide rapid insights, the data collected often lacks consistency and standardisation. Informal data sharing refers to the unstructured and unofficial exchange of information between individuals or groups without adhering to standardised formats, protocols, or formal agreements. This type of data sharing is often based on personal relationships, trust, or verbal communication and lacks systematic documentation or verification. "Community leaders provide informal data on attendance and barriers to schooling, but it's not always complete or reliable."

- Community Leader, North Region

Over 35% of respondents identified informal data-sharing as "essential for addressing community-specific issues," but 28% highlighted its limitations due to a lack of verification protocols.

4.4. Systemic challenges

Systemic challenges significantly impact the effectiveness of data collection and management in Cameroon's education sector. These challenges, including funding mechanisms, technical capacity gaps, infrastructure deficits, and data privacy concerns, limit the ability of stakeholders to develop responsive and efficient data systems that will ultimately address both local and global needs.

4.4.1. Funding mechanisms

Funding is a critical determinant of data collection and accessibility. In Cameroon, data collection efforts are sometimes influenced by donor priorities, which may not always align perfectly with local needs. This highlights the importance of fostering collaborative approaches to ensure data systems effectively address global and local priorities. Schools and CSOs frequently rely on external funding, which comes with specific conditions. These constraints limit the flexibility of local stakeholders to address context-specific challenges.

Over 30% of respondents highlighted "donor priorities" as a key factor shaping data focus areas, with many expressing frustration over the lack of alignment with national goals.

"Our focus on donor priorities limits the flexibility to address pressing local challenges in data collection."

- CSO Leader, Douala

Donor funding also tends to prioritise quantitative data, leaving gaps in qualitative insights critical for understanding socio-cultural barriers to education.

4.4.2. Technical / capacity constraints

The lack of digital literacy and data management skills among school administrators, teachers, and local officials creates significant inefficiencies in data collection and analysis. Most stakeholders rely on manual methods, which are prone to errors and inconsistencies.

Over 40% of teachers and administrators cited "insufficient training in data collection and analysis" as a primary barrier to effective data use.

"Without training in data analysis, we rely on manual methods, which are prone to errors."

- Teacher, Littoral Region

Additionally, researchers and policymakers expressed concerns over the lack of standardised training programmes for stakeholders across different regions. Capacity gaps also limit the integration of emerging digital tools and technologies, which could streamline data processes.

4.4.3. Limited infrastructure

Infrastructural deficits severely limit the ability of rural schools to collect and manage data efficiently. Schools often lack essential resources, such as computers, reliable internet connectivity, and stable electricity. These issues are particularly acute in remote areas, where manual methods dominate.

Fifty per cent of rural respondents reported "infrastructure inadequacies" as a top barrier to data collection, citing outdated methods and delayed reporting as common outcomes.

"Manual methods dominate because we don't have access to computers or stable electricity in our area."

- School Head, North West Region

The infrastructure gap also contributes to delays in data submission from schools to regional and national authorities, undermining the timeliness of evidence used for decision-making.

4.4.4. Data privacy considerations

Concerns about confidentiality and data misuse hinder collaboration and data sharing between institutions, researchers, and external organisations. While data-sharing agreements exist, many stakeholders remain cautious, fearing potential privacy breaches or reputational damage.

Approximately 25% of respondents cited "data privacy concerns" as a major obstacle to collaboration, with schools and government agencies particularly hesitant to share information.

"Confidentiality concerns make institutions reluctant to share data, reducing collaboration opportunities."

- Researcher, Adamaoua

These challenges are exacerbated by the lack of clear guidelines and policies on data security, leading to inconsistent practices across regions and institutions.

5. Recommendations and conclusions

Systemic changes are needed to unlock the full potential of foundational learning data in Cameroon. Addressing infrastructure gaps, enhancing capacity, and fostering collaboration will improve evidence flow and its integration into decision-making.

To establish a robust data ecosystem that effectively scales the uses and users of data, several key pathways must be prioritised. First, building digital infrastructure is essential, as well as equipping schools with computers, internet connectivity, and reliable electricity to streamline data collection and enhance accuracy. As a teacher from Littoral highlighted, "Digital tools would streamline data collection and ensure accuracy in reporting."

Second, enhancing stakeholder capacity through targeted training in data collection, analysis, and reporting is vital for empowering teachers, administrators, and community leaders to handle data more effectively. As one school head in Adamaoua noted, "Training programmes will empower us to manage data more effectively."

Third, developing transparent data-sharing mechanisms, including standardised protocols and formal agreements, will foster trust and reduce delays, supporting the observation by a CSO leader from the North West that "Transparent systems will foster trust and improve data-sharing outcomes."

Fourth, aligning donor priorities with local needs is critical to ensuring that funding addresses context-specific challenges; as a policymaker from the East Region emphasised, "Funding should focus on addressing actual needs rather than external priorities."

Lastly, strengthening community engagement by educating parents and community leaders about the importance of data can bolster grassroots support, reinforcing the system. As stated by a community leader from the North Region, "When parents understand their role in data processes, it strengthens the entire system." These pathways collectively lay the foundation for an inclusive, effective, and scalable data ecosystem.

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