UNLOCKING DATA

Guidance Note

Exploring the Foundational Learning Data and Knowledge Ecosystem in Sub-Saharan Africa

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About this document

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About the Unlocking Data Initiative

The Unlocking Data Initiative is a community of practice that connects African scholars, NGOs, national statistics offices and policymakers to improve 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 Education Sub-Saharan Africa, eBase Africa, 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.

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Abbreviations and acronyms

CBC   Competency-Based Curriculum

CERT   Centre for Education Research and Training

CSO   Civil Society Organisations

FL   Foundational Learning

IDRC   International Development Research Centre

NGO   Non-Governmental Organisations

SSA   Sub-Saharan Africa

1. Introduction

This document outlines the methodological approach adopted by the '*Unlocking Data: Scaling Uses and Users of Education Data*' project to explore FL (FL) knowledge ecosystems in selected African countries. It builds on existing literature on education data mapping developed by the Unlocking Data Initiative (see ↑Selwaness et al., 2022; ↑Lawson & Heady, 2021). While contributing to existing methodological tools for exploring the FL knowledge ecosystem, it also reviews the technical considerations for identifying FL data and research as well as analysing the flow of evidence.

1.1. Background

The foundations of a child's future learning are laid in their early years. Hence, FL, the acquisition of basic literacy, numeracy, and socio-emotional skills, is essential for children's long-term educational success. In Africa, recent data indicates that children are "five times less likely to learn the basics than children elsewhere". Moreover, existing evidence suggests that 'one in five primary school-age children on the continent is still out of school and a quarter will never complete primary education' (↑GEM Report UNESCO, 2023). Ignoring these challenges in Africa can have a cumulative effect over time, affecting children's chances to achieve their full potential in society.

Tackling issues related to basic education in Africa requires data, evidence and coordination among the various stakeholders. Here, as well, challenges persist. For instance, existing knowledge on the state of education, including FL, in most African countries is scarce, mostly invisible and scattered (↑Adam et al., 2020). Moreover, education and FL-related microdata collected by stakeholders for analysis, policy formulation and planning are often not publicly available, while collecting new primary data frequently exceeds the financial capacity of researchers and local policymakers (↑Lawson & Heady, 2021). These challenges are evident in most African countries, although they manifest in relatively different ways.

In Cameroon, for instance, ↑Pambe (2023) likens the education data ecosystem to a broken spider web, abundant in data but lacking coordination and actionable insights. In the same way, despite existing regulatory frameworks for data sharing, enforcement remains weak. As a result, stakeholders like researchers and Non-Governmental Organisations (NGOs) play a crucial role in data collection and evidence generation. However, they often work in silos, reducing their overall impact in promoting evidence use (see ↑Pambe, 2023). Similar challenges are observed in Kenya and Malawi. In Kenya, while the Competency-Based Curriculum (CBC) encourages data integration across different evidence producers, limited grassroots engagement and data sharing persist (see ↑Gachoki & Arisa, 2025). In Malawi, FL evidence is mainly generated by government agencies, universities and donors. However, recent consultations indicate

limited capacity within national systems to effectively manage and disseminate data, as well as to support community-led initiatives that are aligned with national priorities (see ↑Kadzamira et al., 2025).

1.2. Research questions/objectives

Addressing these challenges, whether related to access to basic education and learning outcomes, or data and evidence flow, requires coordinated actions among national and sub-national decision-makers as well as non-state actors. This includes efforts to increase the availability and use of data to improve educational planning and outcomes, especially at the foundational level. The current '***Unlocking Data: Scaling Uses and Users of Education Data***' multi-country project hypotheses that the first step in doing this is to improve actors' understanding of the data and knowledge ecosystem, as well as the flow of evidence. The project is a collaborative effort involving Cameroon, Kenya and Malawi to enhance the accessibility, utilisation, and impact of education data in sub-Saharan Africa. Box 1 provides a definition of concepts used in this report

1.3. Report structure

The remainder of this document is organised as follows: Section 2 outlines our approach to knowledge ecosystem mapping, while Section 3 focuses on assessing the data ecosystem. Section 4 examines methods for understanding evidence flows within the FL landscape. Finally, Section 5 presents conclusions.

Box 1. *Definition of concepts*

1.   Foundational learning

Engagements with stakeholders in different countries revealed that Foundational Learning is known under various terms and that there is currently no universally accepted definition. In the context of Cameroon, Kenya and Malawi, the terms basic education, early childhood education, basic literacy, early learning and 'lifelong skills' are mostly used to refer to Foundational Learning in national policy documents.

For the mapping exercise, the consortium adopted the definition of the Global Partnership for Education (GPE), which refers to foundational learning as [...] **basic literacy, numeracy, and transferable skills such as socio-emotional skills.** As demonstrated by our different search strings (see Sections 3 and 4), the local terms used to designate Foundational Learning have also been considered to avoid missing out on important research outputs and data.

2.   Research data

This guidance note uses data and research data interchangeably. Research data refers to any information or records observed, generated, or created to support or use in research. For mapping Foundational Learning data, our focus has been on primary or secondary quantitative data — numerical information such as survey results, experimental measurements, and statistical records. Primary data is data collected directly by researchers through experiments, surveys, or fieldwork, while secondary data is data obtained from existing sources, such as government reports, published studies, or databases.

3.   Evidence or knowledge

Definitions of evidence vary across disciplines, and there seems to be no widely accepted definition of it in scientific research (↑Yu et al., 2024). Foundational Learning evidence and knowledge are used interchangeably in this document to refer to findings obtained through the systematic search for Foundational Learning research outputs, which may be journal articles, research reports, books and book chapters, and PhD theses.

4.   Evidence flow

This Guidance Note uses the term evidence flow to refer to the process through which evidence – outputs of research findings, data analyses, or empirical insights – is generated, disseminated, and used to inform decision-making and advance knowledge.

2. Knowledge ecosystem mapping

Understanding the FL knowledge ecosystem requires assessing and conducting a meta-analysis of existing research outputs targeting various characteristics. This section presents the methodological considerations for doing so.

2.1. Searches for foundational learning research outputs

FL research in Africa can be identified through various platforms, including specialised academic databases, online archives, and university repositories that host research outputs. To identify relevant FL research outputs, we used a definition stating that FL encompasses literacy, numeracy and socio-emotional skills among children of primary school age in sub-Saharan Africa (SSA). This guided our search, ensuring alignment with a widely accepted understanding of foundational learning in the region.

Figure 1: *Systematic and Opportunistic Search Strategy for Mapping FL Research in SSA*
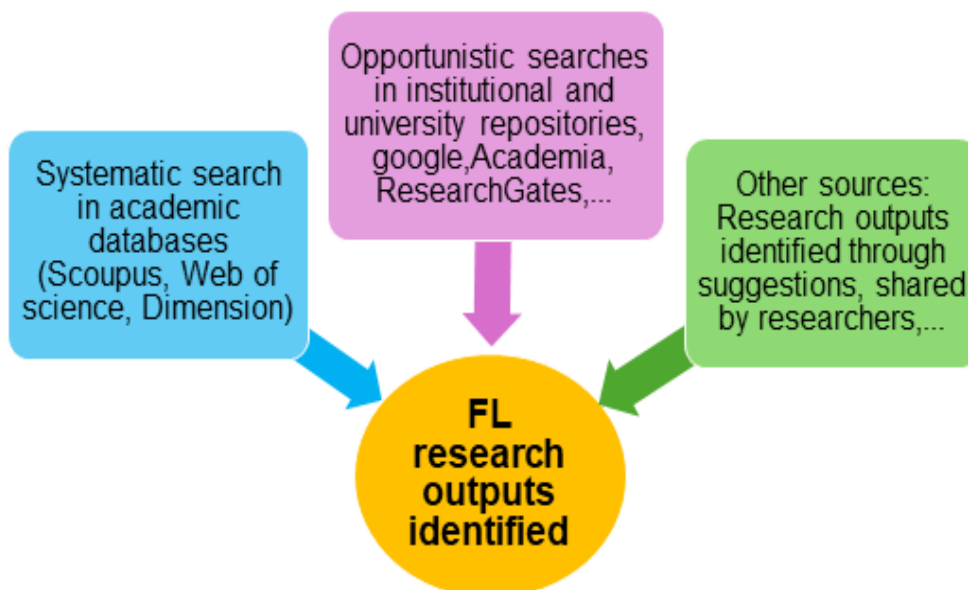
Our approach for mapping FL research in the different SSA countries closely follows the search protocols developed by ↑Binesse et al. (2023), which proposed a detailed framework for identifying, mapping, and assessing FL research outputs in Africa. Our search strategy combines a systematic approach with opportunistic searches, as illustrated below.
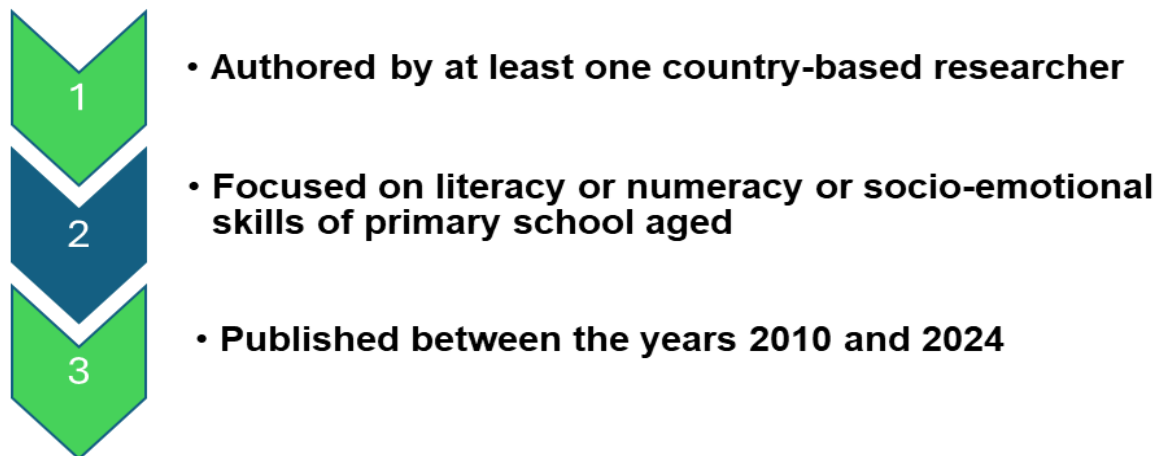
Specifically, to search, we developed and implemented search strings incorporating key terms encountered in the FL literature such as "foundational skills", "basic skills",

"literacy", "reading", and "socio-emotional", among others. However, while a single search string suffices for queries in international databases, local and institutional repositories require tailoring it. An example of a typical search string used is:

> *Country AND ("foundational learning OR early childhood development OR early childhood education OR pre-primary education OR preschool education OR primary education OR kindergarten OR nursery school OR literacy OR numeracy OR cognitive development OR social-emotional learning OR play-based learning".*

Shorter forms of the search string above were tested for identifying FL research outputs. Finally, it was observed that the different searches for FL research outputs, independently of the repositories, may deliver results that are not relevant. Therefore, specific relevance criteria were set for selecting useful research outputs. Table 1 presents the three main selection criteria that we suggested and used in the case of Cameroon, Kenya and Malawi. Any research outputs identified were relevant if they meet the criteria:

Figure 2. Selection criteria

- **1** • **Authored by at least one country-based researcher**
- **2** • **Focused on literacy or numeracy or socio-emotional skills of primary school aged**
- **3** • **Published between the years 2010 and 2024**

Moreover, researchers following this Guidance Note will have to define the types of research outputs that meet the minimum quality criteria to be considered in their ecosystem assessments. Recent mapping exercises of foundational literacy and numeracy research in Ghana and Senegal considered different types of research outputs, including journal articles, PhD theses, books and book chapters (see ⬆Acquah et al., 2024; ⬆Diallo et al., 2024).

2.2. Metadata collection and review of foundational learning evidence

After identifying relevant FL research outputs and compiling them in a dedicated spreadsheet, the metadata on each output identified is collected. Hence, in addition to

the titles and authors' names, a lot of other metadata is worth considering since it is useful for understanding the FL knowledge ecosystem. ↑Lawson et al. (2024) proposed a recent application of this approach to understanding the knowledge ecosystem in four African countries—Ghana, Kenya, Senegal, and Tanzania. Table 2 reports the main metadata needed for the analysis.

Table 1. Metadata

Metadata	Specific items to consider
Research outputs	Title, Abstract, Year of publication, Authors.
Authors' data	Institutional affiliations, country, Gender.
Inequality indicators considered in the study	Ethnicity, Disability, Gender, Poverty, Religion, Location.
Foundational Learning Themes	Literacy, Reading, Writing, Speaking skills, Socio-emotional skills.
Funding data	Funded (Yes/No), Funder's name, Funding types.
Others	Grade levels, Type of publication, Source of the publication, Language of the publication, County of the study, Urban vs. Rural setting.

Box 2. *Analysing the knowledge ecosystem*

The analysis of the mapping results followed a multi-step approach to provide a comprehensive understanding of the data collected on foundational learning. ⇡Lawson et al. (2024) proposes an insightful analysis of metadata on foundational learning. Here are the main elements to consider:

1. **Classification of research outputs**: The outputs were organized into thematic categories (literacy, numeracy, policy, governance, etc.) to identify where most evidence was concentrated and to uncover any gaps.

2. **Quantitative review of data distribution**: Metrics such as the number of outputs per category were analyzed to identify temporal trends and regional disparities in research intensity.

3. **Evaluation of data accessibility and usability**: The accessibility of data was assessed based on criteria such as open access, licensing restrictions, and data quality, with a comparative analysis between government and non-governmental sources.

4. **Stakeholder analysis**: The role of various actors (governments, research institutions, NGOs, international organizations) in generating and utilising Foundational Learning data was analyzed, identifying challenges like lack of collaboration and systemic barriers.

5. **Qualitative contextualization**: Insights from stakeholder discussions and document reviews explored socio-economic, political, and institutional factors influencing research, such as social inequalities and resource constraints.

3. Data ecosystem mapping

This section focuses on research data and presents our approach to mapping and analysing the FL data ecosystem. It builds on the initial methodological contributions by ↑Lawson & Heady (2021) and ↑Selwaness et al. (2022), and includes innovative strategies adopted in our ongoing FL data ecosystem analyses in Cameroon, Kenya and Malawi.

3.1. Data stakeholders' consultation

It is crucial to gather insights from national and sub-national actors involved in education data collection and use (both supply and demand sides) for understanding the landscape of FL data.

3.1.1. Stakeholders' identification

Researchers

For this step to be effective, it is necessary to reflect on the key players who are essential in the education data landscape. Section 2, while focusing on the review of existing knowledge, made it possible to list the researchers and experts who generate knowledge. Besides conducting research and disseminating research outputs, this group of actors probably also collects primary data. Therefore, it is essential to consider researchers when exploring data ecosystems.

Government officials

In most African countries, government officials, namely the Ministry of Education or the National Bureau of Statistics, are the primary education data collectors and suppliers. Given this and the fact that government officials are often the only actors collecting and sharing nationally representative data, they are essential in data ecosystem assessments.

Non-governmental and civil society organisations

A third group to engage during stakeholders' consultations are non-governmental organisations (NGOs) and civil society organisations (CSOs) both local and international, involved in the supply or demand for education data and evidence. It should be noted that in addition to the key actors above, experts from international organisations and donors working in the field of FL research, policy evaluation or financing of local initiatives can also be identified and involved in this exercise.

3.1.2 Engagement strategies

Three main consultation strategies were adopted throughout our different data mapping exercises. This includes interviews, focus group discussions and workshops.

Figure 2: *Key Methods of Stakeholder Consultation*
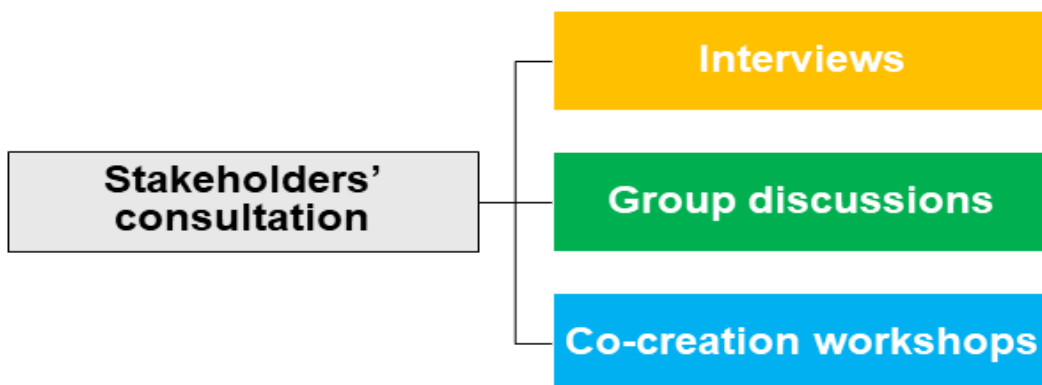
Lessons learnt from applying these strategies in Cameroon, Kenya and Malawi reveal that all national and sub-national stakeholders can't attend the co-creation workshops (or webinars). Group discussions at the sub-national level (in some regions or counties, for example) may prove to be more convenient engagement formats for some key players to share insights on the types of education data they collect, store, analyse and share with other stakeholders. Similarly, interviews may be the best approach to engage with some high-level officials (or donors) to understand national data collection and sharing policy.

3.1.3 Critical topics/questions

Overall, the purpose of the engagement, which is to gather insights and perspectives on how FL data is collected, shared, and used to inform policy and practice at the country level, should be clearly explained before any critical question. Table 3 presents the main topics to cover, independently of the engagement format.

Table 2. Topics to be covered

Topics	Analytical objectives
Foundational Learning policy landscape	To know and list the main policy instruments in place in the country, as well as current Foundational Learning initiatives or programmes.

Data Collection	To know the main FL-related indicators that are important to collect data on and how the participant's organisation collects that data. Understand current practices and challenges in collecting Foundational Learning data.
Data Sharing	To understand how, what data, with whom and how often the participant's organisation shares data they collected. To probe what the main barriers that prevent effective data flow/sharing are, and what incentives can help improve the flow of data sharing (e.g., lack of trust, technical limitations, policy restrictions). It is also useful to probe for enablers. To list the different sources of Foundational Learning data for data tracing.
Data Use	To explore participants' awareness of national or subnational policy/strategy/programme informed by data they collected. To understand participants' perspectives on challenges in using data to inform policies and practices, and how to overcome these. One can also probe the steps that could be taken to encourage greater collaboration and sharing between different actors. (e.g., establishing common data standards, creating data-sharing platforms, and building trust through transparency).
Others	Other topics/questions to investigate evidence flow among stakeholders can also be built into the various engagements.

Although these are the main topics covered during the data ecosystem assessments, depending on context, other topics could be considered and explored. For example, if the National Bureau of Statistics and other data suppliers are aware of and understand the usefulness of research outputs produced using the data they shared, this can enhance a culture of data sharing. The latter idea can be built into the data collection instruments to probe stakeholders' awareness of the importance of sharing data.

Finally, depending on the types of participants, researchers using this Guidance Note can tailor their data collection tools to the stakeholder's profile. For instance, insights from funders of FL research and government officials regarding data collection and sharing may not be the same, since these actors play different roles in the data ecosystem.

3.2. Evidence reviews for data

Section 2 presented our approach to understanding the knowledge landscape, as well as how the evolution and focus of FL research outputs can be assessed using bibliometric analysis. Besides the research element, a review of identified research outputs is crucial to identify data, data sources and other stakeholders involved in data collection and use, since most FL research outputs use existing data or collect primary data.

Drawing on the approach proposed by ⬆Lawson & Heady (2021) and its experimentation in selected SSA countries, we suggest reviewing existing research outputs for tracing data uses and users. If doing this, here are some examples of items to consider.

Table 3: Metadata to consider

Items	Importance
Who collected the data	This informs the ecosystem analysis of the ownership of research data. This can be categorised as researchers, NGOs, CSOs and government.
Period covered by the data	This is to inform about the timely relevance of the data.
Where/geography	This concerns the geography of the data collection and can be assessed in terms of the county or region where data is collected or the rural versus urban setting of the data collection.

Representativeness	This is to probe for the national representativeness of the data and be recorded as Yes or No.
Accessibility	This item helps us understand whether the data used in that research output is in the public domain.
FL-related variables	Which variables in FL will be covered?

Besides these items, other items may be considered depending on the priorities of the data ecosystem assessment. For instance, questions related to the funder of the data collection process may be considered where this item is important to the researchers conducting the assessment.

3.3. Data search

A valuable approach to consider in this guidance note is an opportunistic search for research data (see ⇧Gachoki & Arisa, 2025).

This strategy leverages Google Dataset Search, which, per definition, is a search engine by Google that helps researchers, and the general public discover publicly available datasets across the web and from various sources, including government agencies and research institutions. Concretely, this involves searching for datasets involving FL-related variables using pre-developed search strings. Applying this, we use different combinations of the following search string: "Kenya" AND (foundational learning OR early childhood development OR early childhood education OR pre-primary education OR preschool education OR primary education OR kindergarten OR nursery school OR literacy OR numeracy OR cognitive development OR social-emotional learning OR play-based learning).

It is important to note that using this data search strategy will lead to a high number of results, most of which may not be relevant. Hence, similar to the case of research outputs, it is suggested to carefully assess each dataset identified for relevance. Finally, for all relevant datasets identified, the metadata suggested in Table 4 should be collected and considered for understanding the data ecosystem.

Box 3. Analysing the data ecosystem

1. **Understanding Foundational Learning policy and national priorities**
Data from stakeholders' interviews, focus group discussions and co-creation workshops can be used to draw a picture of the Foundational Learning policy landscape. This should reflect country-level efforts to improve learning outcomes at the basic level as well as main innovations introduced by policymakers to improve access to basic education. A comprehensive example is provided by ⇡Gachoki & Arisa (2025) (see pp.20) on the case of Kenya.

2. **Data System and Data Availability**
Data (and data sources) shared by stakeholders in the various engagements, combined with data retrieved from reviewing research outputs and online datasets searches, can be referenced and listed in the analysis. Moreover, the metadata collected (see Table 1) can be used to report on Foundational Learning data availability, geographical coverage, Foundational Learning indicators, and GESI considerations in the data landscape, when the corresponding metadata is collected for each dataset identified/shared.

3. **Data gaps**
The identification of data gaps derives from the metadata analyses. For instance, the regional coverage observed in existing national data repositories reveals a potential data gap. Similarly, Foundational Learning indicators present in the datasets identified, namely literacy, numeracy and socio-emotional skills, can also reveal data gaps. The same rationale applies to data collected in rural versus urban settings.

4. Understanding foundational learning evidence flow

Building the analysis of evidence flow into the data and knowledge ecosystem assessment tools is crucial because understanding the dynamics of education evidence flow may help leverage data and evidence as an asset for informed decision-making in African countries. Given that contexts are different and various groups of stakeholders are involved in the education space, there is no specific blueprint for assessing the FL evidence flow. Nevertheless, we suggest considering the three following items for a comprehensive assessment.

## 4.1 Identifying relevant groups of stakeholders

The previous steps of mapping research and data (Sections 2 & 3) helped identify the various groups of stakeholders involved in the landscape of knowledge generation and their level of involvement. Among others, this includes users of data (researchers, CSOs, development partners), and data suppliers (National Bureau of Statistics, Ministry of Education, researchers, CSOs). Similarly, the exercise also identified users of research evidence (Ministry of Education, Education institutions and decision-makers) and suppliers of evidence (researchers, Ministry of Education, etc).

4.2 Flow of evidence

Insights collected during the different stakeholders' engagements and the co-creation workshop help visualise the flow of evidence among key stakeholders in the FL ecosystem. Depending on the level of interactions reported during the stakeholders' engagements, the flow of evidence between two different groups of stakeholders, for example, the Ministry of Education and the National Bureau of Statistics, may be described as *strong link* or *weak link* (A three-point scaling system, *very strong*, *strong*, *weak link*, is also feasible). Figure 3 presents a graphical illustration of the flow of evidence in the FL space, where weak and strong links have been differentiated.

Empirical applications of this approach to assess FL evidence flow to enhance uses and users of FL data in Cameroon, Kenya and Malawi have been reported by ⇡Pambe et al. (2025), ⇡Gachoki & Arisa (2025) and ⇡Kadzamira et al. (2025), respectively. In addition to highlighting the complexity of interactions between stakeholders in the evidence space, these case studies also work out some of the barriers and factors enabling effective evidence flows.

Figure 3: Graphical illustration of the evidence flow in the FL space in Kenya
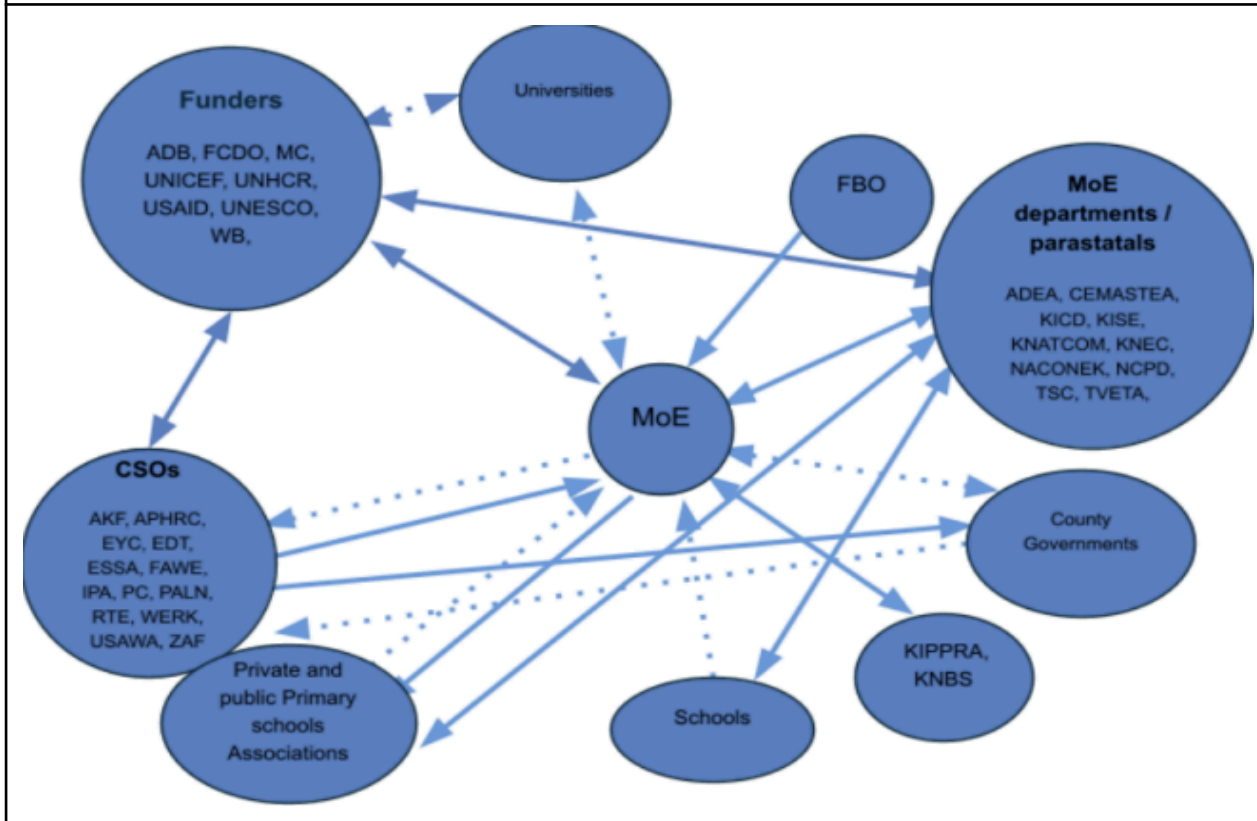
Notes: Flow of evidence between different groups of stakeholders, including universities, Faith-based organisations (FBOs), Ministry of Education (MoE), Kenya National Bureau of Statistics (KNBS), Kenya Institute of Public Policy and Research Authority (KIPPRA), CSOs and funders.

Source: ⇡Gachoki & Arisa (2025)

4.3 Enablers and barriers of evidence flow

Data collected during the stakeholders' engagements are also useful to comprehend the barriers to data collection and sharing. Country-specific examples of barriers and enablers are provided in the different country reports by ⇡Pambe et al. (2025), ⇡Gachoki & Arisa (2025) and ⇡Kadzamira et al. (2025).

- The main barriers include:

    - **Limited awareness and know-how** – Some data suppliers may not be aware of the importance of data sharing, while their capacity to effectively do so likely affects data sharing.

- ○ **Cultural barriers** – Some organisations and individuals may be reluctant to share data due to competition, lack of trust, or concerns about misuse. Some also demonstrate a data-holding culture, considering the data they collected as private.
- ○ **Technical challenges and funding** – Poor online infrastructure and limited funding for research and data collection are among challenges identified.
- ○ **Lack of standardization** – Inconsistent data formats, taxonomies, and metadata structures make it difficult to integrate and share data across systems.

- Enablers include:

  - ○ **Policy framework** – A data and knowledge-sharing-friendly policy framework and initiatives have been identified in selected countries. This enables education evidence flows among stakeholders in the selected countries.
  - ○ **Stakeholders' commitment and call for co-creation** – Significant sharing of knowledge generation or research outputs are the result of in-country research collaboration.

5. Concluding remarks

This document proposes a methodological guide to assess the education evidence space in SSA. It draws on lessons learnt by conducting three case studies in Cameroon, Kenya and Malawi and considering the field of FL. While it complements previous works of the Unlocking Data Initiative on education data mapping (see ↑Selwaness et al., 2022; ↑Lawson & Heady, 2021), it contributes to existing methodological tools to explore the evidence ecosystem. Concretely, the added value of this note to existing knowledge lies in two key areas. First, it combines strategies to map education evidence (outputs of research findings) and data, treating these items as two sides of the same coin. Second, it highlights the importance of understanding the flow of evidence in the education space, as this helps understand the interconnection between data, knowledge production and evidence flow.

While the building blocks of exploring the education evidence and data landscapes are laid down in this guidance note, their application in the three countries considered revealed that a few challenges are worth mentioning here. First, when searching for research outputs to assess the state of knowledge in FL, we observed fragmented literature in African countries. Because of the absence of a unique repository for education research, the literature is scattered across various sources and is not consolidated, hence not easily accessible. Secondly, in the different engagements with data stakeholders (e.g., government officials, researchers or CSOs), some resistance may be observed to sharing data. For instance, researchers may be unwilling to share data they collected, while Ministry of Education stakeholders may hold crucial country representative datasets, arguing that these are not digitized or contain politically sensitive variables. This culture of 'holding onto data' and the 'fear of losing control' of the data should be factored in and anticipated during the different engagements with the demand and supply sides of data and evidence.

Finally, since the process outlined in this guidance note involves identifying research, datasets, and their producers, as well as engaging with them, we recommend using these key elements to generate public goods and foster learning communities at both local and national levels. The main public goods include:

- Addressing some existing knowledge gaps identified while reviewing and conducting a bibliometric analysis of available literature.
- Sharing datasets and research outputs identified to improve new knowledge generation and evidence flow.
- Building or strengthening the existing communities of demand and supply of evidence by using data from stakeholders' engagements.

6. References

Acquah, S., Lawson, L., Asare, S., & Essah, P. (2024). *Mapping foundational literacy and numeracy research in sub-Saharan Africa: Ghana country report.* Education Sub Saharan Africa (ESSA). https://essa-africa.org/sites/default/files/inline-files/FL_GH_Ctry_Rep_INV-043649.pdf

Adam, T., Agyapong, S., Asare, S., Heady, L., Wacharia, W., Mjomba, R., Mugo, J., Mukiria, F., & Munday, G. (2020). *Unlocking data to tell the story of education in Africa: Webinar summary & synthesis.* Zenodo. https://doi.org/10.5281/ZENODO.4279156

Binesse, H., Rose, P., & Silva, R. (2023). *Literature search protocol: Mapping African-led foundational literacy and numeracy publications in English, French, and Portuguese.* University of Cambridge, REAL Centre. https://www.educ.cam.ac.uk/centres/real/researchprojects/ongoing/mapping-education-sub-saharan-africa/Literature-search-protocol-mapping-FLN-research-in-languages.pdf

Diallo, T., Lawson, L., Asare, S., & Essah, P. (2024). *Mapping foundational literacy and numeracy research in sub-Saharan Africa: Senegal country report.* Education Sub Saharan Africa (ESSA). https://essa-africa.org/sites/default/files/inline-files/FL_EN_SN_Ctry_Rep_INV-043649.pdf

Gachoki, C., Arisa, K., 2025. Exploring the Foundational Learning Data and Knowledge Ecosystem in Sub-Saharan Africa: Kenya's Situational Analysis. Unlocking Data. https://doi.org/10.53832/unlockingdata.1003

GEM Report UNESCO, 2023. Brochure, Spotlight report on basic education completion and foundational learning in Africa: Born to learn. GEM Report UNESCO. https://doi.org/10.54676/WZIV1711

Kadzamira, E., Saddick, L., Twabi, H., & Chiwaya, P., 2025. *Exploring the foundational learning data and knowledge ecosystem in sub-Saharan Africa: Malawi's situational analysis.* Unlocking Data. https://doi.org/10.53832/unlockingdata.1019

Lawson, L., Acquah, S., Diallo, T., Asare, S., & Essah, P., 2024. *Mapping foundational literacy and numeracy research in four sub-Saharan African countries: Lessons from country-level searches.* Education Sub Saharan Africa (ESSA).

https://www.educ.cam.ac.uk/centres/real/researchprojects/ongoing/mapping-education-sub-saharan-africa/FLN_cross_country_report.pdf

Lawson, L., & Heady, L., 2021. *Mapping education data in sub-Saharan Africa.* Education Sub Saharan Africa (ESSA). https://essa-africa.org/sites/default/files/inline-files/Draft%20Mapping%20Methodology_Unlocking%20Data.pdf

Pambe, R., 2023. *The broken spider web: Navigating the complex education data ecosystem in Cameroon.* Unlocking Data. https://unlockingdata.africa/2023/04/20/the-broken-spider-web-navigating-the-complex-education-data-ecosystem-in-cameroon/

Pambe, R., Yuh, N. M., Awah, N., Kelese, M., & Okwen, P., 2025. *Exploring the foundational learning data and knowledge ecosystem in sub-Saharan Africa: Cameroon's situational analysis.* Unlocking Data. https://doi.org/10.53832/unlockingdata.1017

Selwaness, I., Adam, T., Lawson, L., Heady, L., 2022. Guidance Note on Education Data Mapping in Sub-Saharan Africa: Moving from theory to practice. EdTech Hub. https://doi.org/10.53832/edtechhub.0096

Yu, X., Wu, S., Sun, Y., Wang, P., Wang, L., Su, R., Zhao, J., Fadlallah, R., Boeira, L., Oliver, S., Abraha, Y.G., Sewankambo, N.K., El-Jardali, F., Norris, S.L., Chen, Y., 2024. Exploring the diverse definitions of 'evidence': a scoping review. BMJ EBM 29, 37–43. https://doi.org/10.1136/bmjebm-2023-112355