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Africa Regional Education System Resilience Observatory



EDUCATION SYSTEM RESILIENCE IN ZAMBIA:

UNDERSTANDING MEANINGS, PRACTICES AND CHALLENGES

September 2026

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DISCLAIMER

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ACRONYMS AND ABBREVIATIONS

ARESRO	Africa Regional Education System Resilience Observatory
CCZ	Council of Churches in Zambia
COVID-19	Coronavirus disease of 2019
DEBS	District Education Board Secretary
DESO	District Education Standards Officer
DMMU	Disaster Management and Mitigation Unit
ECE	Early Childhood Education
ERS	Education System Resilience
FGD	Focus Group Discussion
GPE	Global Partnership for Education
IDRC	International Development Research Centre
KII	Key Informant Interview
KIX	Knowledge and Innovation Exchange
LMIC	Low- and middle-income countries
NGO	Non-Governmental Organization
PESO	Provincial Education Standards Officer
PTA	Parents' Teachers Association
RAN	ResilientAfrica Network
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
VVOB	Education for Development (Belgium)
ZCCB	Zambia Conference of Catholic Bishops
ZEEL	Zambia Enhancing Early Learning
ZOCS	Zambia Open Community Schools

EXECUTIVE SUMMARY

Introduction: Zambia's education system faces interconnected pressures from climate-related hazards, disease outbreaks, inadequate financing, overcrowding, infrastructure and teacher shortages, technological change, and persistent inequalities. Although Zambia has introduced policies and programs relevant to education system resilience (ESR), limited evidence has been available on how resilience is understood and, how existing and emerging disruptions affect the system, and which learners are most vulnerable. This study, undertaken through the Africa Regional Education System Resilience Observatory, aimed to strengthen the evidence base for resilience-oriented education policy and practice in Zambia by exploring the meanings and practice of ESR as well as future disruptions to Zambia's education system.

Study design: The study used a qualitative, exploratory design. Data were collected from four purposively selected districts in Lusaka and Southern Provinces: Lusaka, Chilanga, Choma, and Monze. The research team conducted 59 key informant interviews and six focus group discussions with national and subnational government officials, school administrators, teachers, teacher educators, development partners, civil society organizations, teacher unions, community representatives, and stakeholders from related sectors. All study participants were purposively selected based on their potential to provide rich information about ESR in Zambia.

Key findings

Contextual meanings and practices of Education System Resilience in Zambia

1. The findings show that ESR was understood as sustaining learning and service delivery, adapting to changing conditions, and maintaining inclusive access and learner retention during disruptions. However, ESR depends not only on maintaining continuity during disruptions, but also on strengthening the system's adaptive capacity through adequate staffing, infrastructure, teacher preparedness, ICT facilities, and institutional coping mechanisms.
2. The findings indicate that Zambia is strengthening ESR through a combination of practices, including coordinated stakeholder partnerships, learner-centered health and nutrition interventions, teacher capacity building, and the adoption of technology for learning delivery. These initiatives enhance the education system's ability to maintain continuity of learning, support vulnerable learners, improve institutional preparedness, and respond to current and future disruptions.
3. Participants reported that Zambia had a comprehensive policy framework for strengthening ESR through policies such as the Free Education and School Re-entry Policy as well as other measures aimed at promoting access, learner retention, and continuity of education during periods of disruptions. However, respondents did not explicitly discuss policies relating to disaster risk reduction, early warning systems, or crisis-sensitive planning. This mismatch may reflect a predominantly education-focused understanding of resilience, while limited interview probing may also have constrained consideration of broader multisectoral shocks and practices. Participants

emphasized that weak implementation, limited emergency financing, and bureaucratic processes constrain the effectiveness of the identified policy measures.

Current and future disruptions to the education system in Zambia

1. The study found that Zambia's education system faces a complex, interconnected set of disruptions, driven primarily by weak policy implementation, inadequate planning, chronic underfunding, and institutional rigidity.
2. Participants identified climate change, overcrowding, infrastructure deficits, teacher shortages, poverty, disease outbreaks, technological change, and political transitions as major risks that are currently faced and likely to intensify in the future. These disruptions reinforce one another, affecting continuity of learning, educational quality, and access across the sector.
3. The findings suggest that strengthening ESR will require addressing the structural drivers of vulnerability through improved policy implementation, sustainable financing, climate-responsive planning, stronger infrastructure, investment in teachers, and more adaptive governance capable of anticipating and responding to future shocks.

Effective approaches and planning to address the future disruptions for better Education System Resilience in Zambia

1. Participants noted that although good policies are already in place, optimal benefits will be realized only through effective implementation, supported by increased and sustained investments in infrastructure, technology, teacher recruitment, and capacity enhancement.
2. Findings indicate a need to accelerate investments in ICT infrastructure, digital learning, and internet connectivity, while expanding open and distance learning to improve learning continuity and system flexibility.
3. Participants highlighted the need for regular continuous development training (CPD), curriculum-responsive teacher training, in-service professional learning, and ongoing orientation to ensure teachers remain equipped to respond to emerging education challenges.
4. Participants proposed shifting from reactive responses to proactive preparedness by strengthening disaster risk reduction, contingency planning, and community awareness.

Conclusion: This study demonstrates that the education system's resilience in Zambia is a dynamic, context-specific process focused on ensuring continuity of learning, equitable access, and the system's capacity to anticipate, prepare for, respond to, and adapt to disruptions. While Zambia has established a strong policy foundation for resilience through initiatives such as free education and school re-entry policies, the study finds that resilience is constrained by persistent implementation gaps, inadequate financing, teacher and infrastructure shortages, and limited institutional capacity.

The findings further highlight that Zambia's education system is increasingly exposed to interconnected risks, including climate change, disease outbreaks, technological change, economic pressures, and persistent social inequalities. Strengthening resilience therefore requires moving beyond emergency response toward a whole-system approach that

embeds resilience across governance, financing, infrastructure, teacher development, inclusion, and stakeholder collaboration. Ultimately, resilience should be understood as a continuous process of strengthening education systems through effective implementation, adaptive governance, and sustained investment, ensuring that all learners can access equitable, inclusive, and quality education despite an increasingly uncertain and complex risk environment.

Key recommendations: Zambia's education system faces increasing pressures from resource constraints, implementation gaps, climate change, and emerging social and technological disruptions. Strengthening ESR requires a proactive, whole-system approach to anticipating, preparing for, responding to, recovering from, and adapting to future disruptions. The following strategic recommendations are proposed:

1. *Strengthen equitable and inclusive access to education*: The Ministry of Education should strengthen the implementation of free education including expanding it to Early Childhood Education (ECE) as well as targeted support for vulnerable learners, particularly girls, learners with disabilities, and children in rural and disadvantaged communities.
2. *Expand resilient and inclusive education infrastructure*: Government should expand safe, inclusive, accessible, and climate-resilient education infrastructure including classrooms, ECE centers, laboratories, libraries, sanitation facilities, and digital learning facilities.
3. *Strengthen the teacher workforce*: Government should address teacher shortages through targeted recruitment, equitable deployment, retention, and continuous professional development in inclusive education, digital literacy, and learner-centered pedagogy.
4. *Expand school health and nutrition support*: Government should strengthen school feeding, health, psychosocial, counselling, and other support services, particularly for vulnerable learners.
5. *Enhance coordination and emergency preparedness*: Government should strengthen multi-sectoral collaboration, information sharing, disaster preparedness, and capacity building for education stakeholders.
6. *Strengthen policy implementation and governance*: Government should strengthen leadership, monitoring, accountability, Education Management Information System (EMIS), and evidence-based planning to improve implementation of existing policies.
7. *Increase sustainable financing for ESR*: Government should protect and diversify education financing, prioritizing resilient infrastructure, teacher development, inclusion, digital learning, and emergency preparedness.
8. *Mainstream climate resilience and future preparedness*: Government should integrate climate adaptation, disaster risk reduction, early warning systems, and scenario-based planning across the education sector.
9. *Advance gender equity and inclusion*: Government, in collaboration with key stakeholders, should strengthen support for adolescent mothers and other vulnerable learners while addressing gender-based violence, early marriage, teenage pregnancy, poverty, and other barriers to education.



1.0 INTRODUCTION

Photo: adobery101 / Magnific

1.1 Introduction and background

Resilience challenges have been experienced across education systems in most countries within the African region. Countries in Sub-Saharan Africa (SSA) face several development challenges that affect multiple sectors. The major current disruptions in the African region (such as climate change, pandemic threats, civil wars, migration, and displacement) have adversely affected community livelihoods, education systems, service delivery, and governance systems. Despite millions of dollars invested in development, predictable disruptions continue to cause similar adverse impacts on the same communities and systems, indicating a shortfall in resilience. Nowhere was this more evident than during the COVID-19 pandemic. The poly-crisis of climate-related adversity, COVID-19, and mounting conflicts has dampened socio-economic gains in Sub-Saharan Africa (Oloukoi & Wahab, 2024).

In Zambia, despite the education system's transformation over the years, the system continues to face numerous resilience challenges. For example, ensuring the continuity and quality of education remains a pressing concern for the education system. Zambia's learning poverty level, at 98.5%, is among the highest globally, with many learners unable to achieve the government's minimum reading proficiency (World Bank, 2022). Currently, only 45% of eligible children have access to early childhood education. This limited access is further marked by equity gaps, with children in rural and hard-to-reach areas facing the greatest challenges (MoE, 2024). Transition rates from primary to secondary school are also alarmingly low, at 63%, partly due to limited availability of secondary schools within the country (MoE, 2024). Only 46.8% of secondary students progress to tertiary education, a figure exacerbated by barriers faced by girls, including early marriages, teenage pregnancies, and limited access to sexual and reproductive health information (Kabir, 2023; UNICEF, 2024). There is also a lack of comprehensive data on access to education for learners with disabilities, making it challenging for the country to make informed, data-driven policy decisions (Matafwali, 2022). Although the Ministry of Education collects data on enrollment by grade, gender, and geography, the data is not disaggregated by disability type.

Adverse climate effects are another major shock to Zambia's education systems. Zambia has experienced several climate-related risks and disasters, primarily stemming from natural hazards such as floods and droughts. Climate change and climate vulnerability continue to affect vulnerable communities at a scale and magnitude never seen before in Zambia's history. For example, from the onset of the 2019/2020 rainy season, the country experienced hailstorms that affected over 100 schools, 15 health facilities, and dwelling houses, impacting more than 6,000 households nationwide (Ministerial Statement, February 25, 2020). The areas most affected by floods include Eastern, Muchinga, Northern, North-Western, and Lusaka Provinces. In addition to being prone to floods, Zambia also faces periodic droughts, particularly in the Southern and Western provinces, resulting in crop failures, water shortages, food insecurity, and livestock losses, affecting both rural livelihoods and urban populations. More recently, drought, exacerbated by the global climate crisis and the El Niño weather phenomenon, caused Lake Kariba to shrink in volume by 98%. As a result, hydropower (Zambia's primary source of electricity) failed, leaving people without power for long hours a day. In addition to the power outages and

food shortages, 21,000 cholera cases were reported in October 2023. Consequently, President Hakainde Hichilema declared the drought a national disaster and emergency in February 2024. The effects of climate change have undermined the preparedness and responsiveness of the government, educational institutions, and communities. Moreover, the climate crisis is visibly affecting students' learning, given that all schools depend on the national grid, which relies heavily on hydroelectric power.

Additionally, when crops fail and livelihoods are lost, learners and students go to work rather than to school. Girls are more likely to marry early during weather-related crises and to drop out of school to take on additional chores, such as fetching water during droughts (Nalungwe, 2024). As a result, Zambia's disaster management agenda was developed to proactively reduce the risks and impacts of natural and human-induced disasters through coordinated preparedness, response, recovery, and resilience-building efforts. The agenda includes key components such as hazard and risk assessment, early warning systems, community engagement, capacity building, emergency response coordination, resource mobilization, and the integration of climate change adaptation (DMMU, 2024). It emphasizes multi-sectoral collaboration among government agencies, local authorities, civil society, and the private sector to protect vulnerable populations, critical infrastructure, and the environment from disasters. This agenda provides a structured framework to guide disaster management discussions and actions in Zambia, ensuring comprehensive coverage of all critical aspects, from risk assessment to recovery and community involvement (DMMU, 2024).

Recurrent climate change-related disasters, such as droughts, famines, and nutritional emergencies, experienced in Zambia and across SSA continue to undermine education systems. Climate change has thus become a significant challenge for global education systems, especially in early childhood development, teacher training, and primary and secondary education. Accordingly, the United Nations Framework Convention on Climate Change (UNFCCC) and the 2015 Paris Agreement underscore education's role in climate change mitigation and adaptation. Other disruptions affecting the education system in Zambia include HIV/AIDS, cholera, inadequate water and sanitation, poverty, child marriages, and ineffective implementation of inclusive education (Carm, 2018; Matafwali, 2022; Mwalimu, 2014).

1.2 Existing policies, regulations and reforms

In addition to international policies to which the country subscribes, Zambia has developed local policies and regulations to address numerous resilience issues across the four sub-sectors of the education system, namely early childhood education (ECE), primary education, secondary education, and teacher training, which are the focus of the study. The international and regional frameworks include the Sustainable Development Goals 2015-2030, the African Union Agenda 2063, the Continental Education Strategy for Africa 2016-25, and the SADC Regional Indicative Strategic Development Plan 2030, among others. At the national level, Zambia's Vision 2030 and the current Eighth National Development Plan also outline the country's aspirations and strategies in education. Zambia introduced free education in 2022 as a pivotal objective within the Eighth National Development Plan (NDP) framework. This led to increases in school enrollment rates of

8.4% in 2021 and 12.4% in 2022. These figures demonstrate a growing demand for education despite persistent disruptions.

During the COVID-19 pandemic, Zambia, through the Ministry of Education and its partners, developed and implemented the Education Contingency Plan to respond to and mitigate the pandemic's impact on learners (Matafwali & Masaiti, 2024). The plan drew on various methods to keep children learning, including printed learning packages, radio, television, and online learning via computers and mobile phones. However, most learners from remote rural areas, migrant children, children with disabilities, and those from vulnerable households could not easily access these modes of learning (PMRC, 2022). For example, computer access and use were 14.7% in urban areas and 2.7% in rural areas (Zambia Information and Communications Technology Authority, 2018). This indicates a significant disparity in access to basic digital technologies across Zambia's socioeconomic and urban-rural divides, which further hinders the provision of inclusive distance learning.

Other reforms in Zambia have included curriculum reviews to make curricula more relevant to the modern economy. In this context, emphasis is placed on Science, Technology, Engineering, and Mathematics (STEM) subjects, as well as vocational training to equip learners with practical skills within a competency-based curriculum (Ministry of Education, 2024). Similarly, Zambia has implemented a phased introduction of the competency-based curriculum, which was completed in 2021 (UNICEF, 2020). Other measures have included improving teacher training and providing ongoing professional development; offering incentives for teachers working in remote areas, including better pay and working conditions; and improving infrastructure through support from development partners. For example, the World Bank, through the Zambia Education Enhancement Project (ZEEP), is building secondary schools in rural areas, while the Zambia Enhancing Early Learning Project (ZEEL) is building early childhood education centers across the country. Further, to improve access for marginalized groups, interventions such as the school feeding programs under the School Health and Nutrition (SHN) and the Keeping Girls in School (KGS) programs have been implemented to support girls from vulnerable households with cash transfers and bursaries.

Zambia has developed a comprehensive, integrated policy framework to address resilience, Disaster Risk Reduction (DRR), and climate change adaptation across multiple sectors, including education. This framework is anchored in key national policies, including the National Disaster Risk Management Policy (2024), the National Policy on Climate Change (2015), and the National Adaptation Plan (2023). Together, these policies promote a proactive, anticipatory approach to risk management, emphasizing early warning systems, community engagement, and multisectoral coordination to reduce vulnerabilities and strengthen adaptive capacity.

The National Disaster Risk Management Policy represents a strategic transition from reactive disaster response to proactive risk reduction and resilience building. It mandates the integration of DRR into national and sectoral development planning, aligning Zambia's efforts with international frameworks such as the Sendai Framework for Disaster Risk Reduction and the Paris Agreement on Climate Change. Key components include establishing multi-hazard early warning systems, conducting comprehensive risk assessments, and implementing community-based disaster risk management initiatives to empower local populations.

Complementing these efforts, the Ministry of Green Economy and Environment leads climate change adaptation initiatives through instruments such as the National Framework for Weather, Water, and Climate Services (2025). This framework enhances resilience by delivering timely, accurate climate information, strengthening institutional capacities, and supporting climate risk-informed decision-making across sectors.

Beyond these overarching policies, Zambia's Education Strategic Plan (2022-2026) explicitly integrates resilience and disaster risk reduction principles. The plan prioritizes the development of inclusive, resilient education infrastructure that can withstand shocks such as pandemics, floods, and droughts. It emphasizes preparedness, continuity of learning during emergencies, and the promotion of adaptive capacities among learners, educators, and institutions. This strategic focus ensures that the delivery of education remains robust and responsive in the face of diverse risks.

The Disaster Management and Mitigation Unit (DMMU), housed within the Office of the Vice President, plays a central role in Zambia's disaster management architecture. Established in 1994, the DMMU coordinates national efforts across disaster preparedness, response, mitigation, and recovery. It is instrumental in operationalizing disaster risk reduction policies, managing early warning systems, and fostering community-based disaster resilience.

In partnership with the Ministry of Education and other stakeholders, the DMMU supports the education sector's resilience by facilitating disaster preparedness planning, ensuring continuity of education services during crises, and coordinating post-disaster recovery efforts. This collaboration integrates disaster management into national development priorities, safeguarding educational infrastructure, protecting learners and staff, and maintaining uninterrupted delivery of educational services. Through these coordinated policies and institutional roles, Zambia strengthens its capacity to anticipate, prepare for, mitigate, and recover from disasters and climate-related challenges, thereby enhancing the resilience and sustainability of its education system alongside other critical sectors.

1.3 Study purpose

Despite growing disruptions to education systems and increasing calls to strengthen education system resilience, limited evidence exists on how countries conceptualize, operationalize, and practice resilience within their education systems. In Zambia, ESR is an emerging area of research, with important gaps in documenting the meanings of resilience, specific resilience-building interventions, identifying the key actors involved, and understanding how the education system responds and adapts to different disruptions There is also limited comprehensive analysis of the nature and range of disruptions affecting the education sector, as well as the vulnerabilities and capacities that shape the system's ability to anticipate, absorb, adapt to, and recover from such disruptions.

Therefore, this study seeks to examine how education system resilience is understood and practiced in Zambia, document current and emerging disruptions affecting the education sector, and assess system vulnerabilities and capacities to anticipate, respond to, adapt to, and recover from these disruptions. The findings will contribute to evidence-based

policy, planning, and programming aimed at strengthening the resilience of Zambia's education system and its capacity to withstand future disruptions.

General objective

To explore the meaning, practices and vulnerabilities of education system resilience in the context of Zambia.

Specific objectives

1. To explore the meanings and practices of education system resilience in Zambia
2. To explore potential future shocks and stressors, risks, vulnerabilities, and capacities in Zambia
3. To identify effective approaches to address the future shocks and stressors, risks, vulnerabilities, and capacity gaps to strengthen education system resilience in Zambia.

2.0 METHODOLOGY

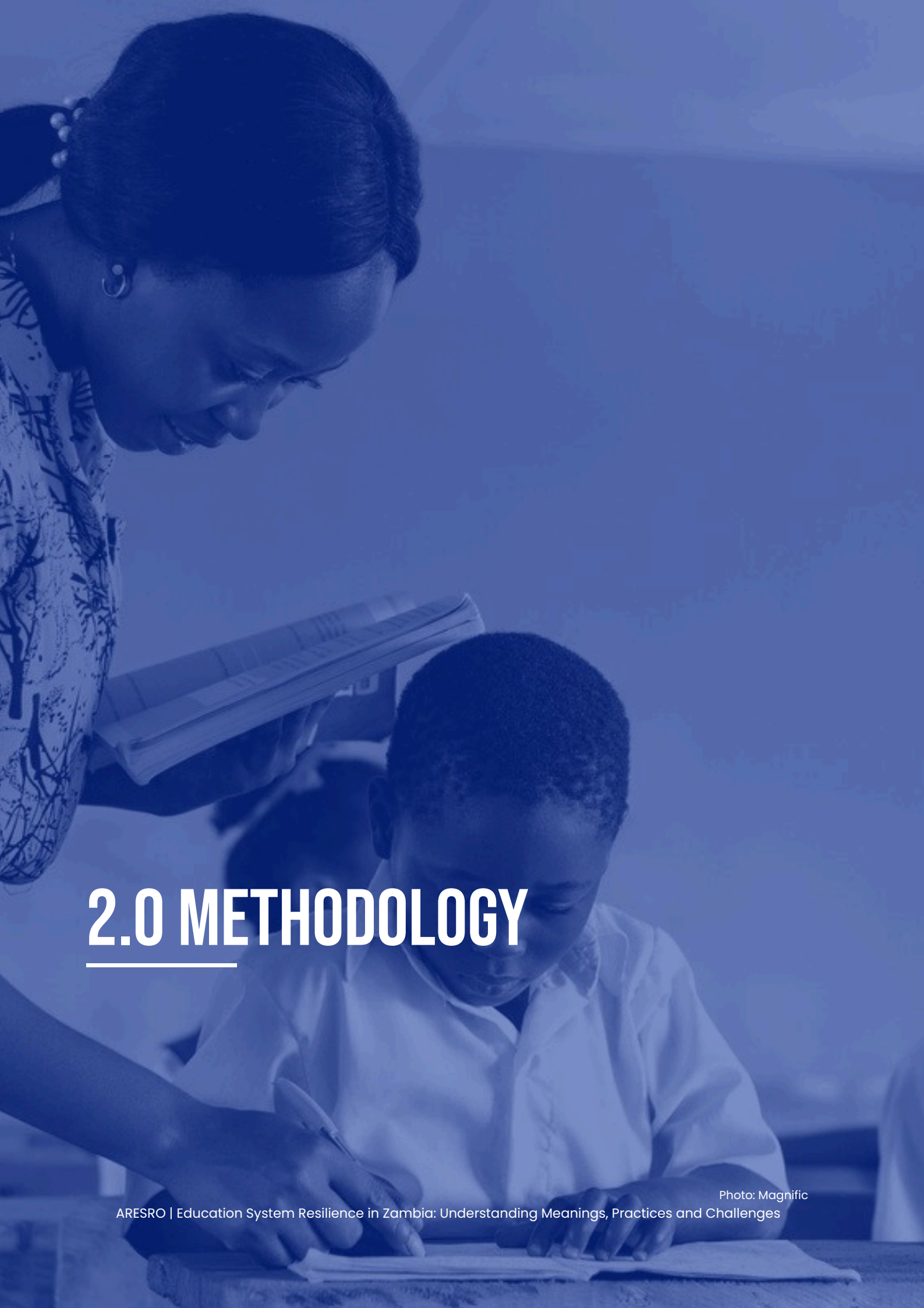
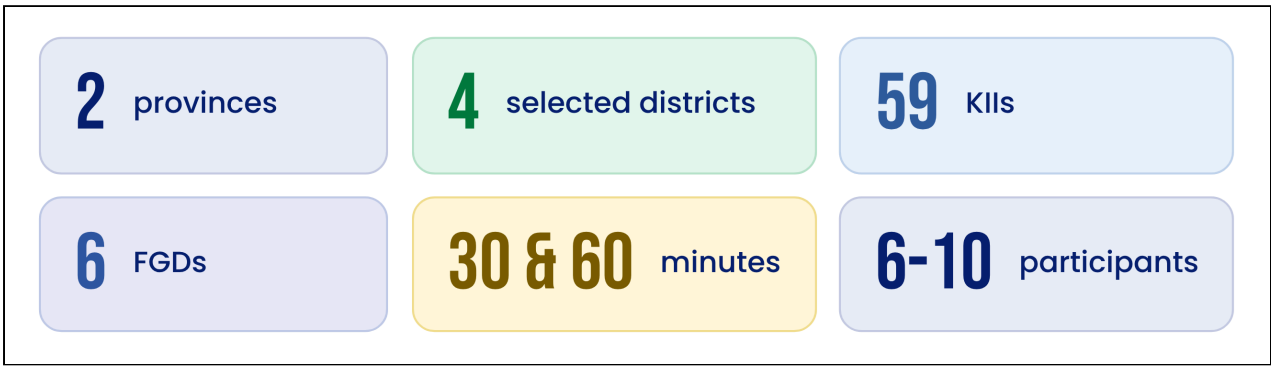


Photo: Magnific

This exploratory research was conducted to gain deeper insights into stakeholders' understanding, perceptions, and practices of the education system resilience in Zambia. The study used qualitative approaches to explore participants' understanding of ESR and associated practices, as well as anticipated disruptions, risks, vulnerabilities, and coping strategies, both now and in the future.

Figure 1: Methodology



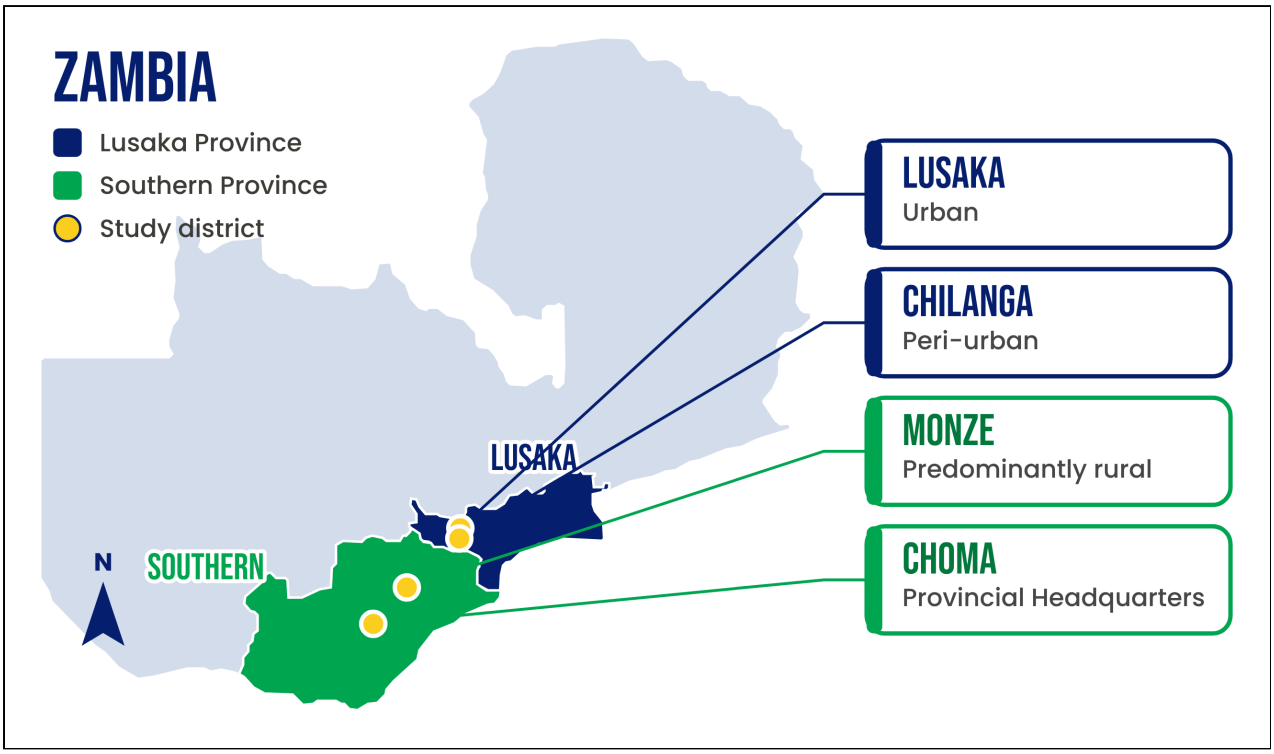
2.1 Study site

The study took place in two provinces of Zambia, namely Lusaka and Southern Provinces, selected to capture diverse geographical and socio-political contexts within the country. Two districts were picked from each of the two provinces, as shown in Table 1.

Table 1: Provinces and districts for the sample

Province	District	General characteristic
Lusaka	Lusaka	Urban
Lusaka	Chilanga	Peri-urban
Southern	Choma	Provincial Headquarters
Southern	Monze	Predominantly rural

Figure 2: Study site



Lusaka province was selected because, in addition to being the epicenter of pandemics and epidemics, it has also recorded educational challenges, such as overcrowded classes. Furthermore, Zambia's demographics show that the country's population is concentrated mainly around Lusaka, with the largest population size at 3,079,964 (Zambia Statistics Agency, 2022). Lusaka is also a hotspot for cholera owing to the province's high population density, inadequate waste management, and poor drainage systems. Similarly, the Southern Province was severely affected by epidemics such as cholera, which were exacerbated by flooding and related environmental factors (Zambia Statistical Agency, 2022). The Southern Province also has a high number of pregnancies among Grade 8 and 9 learners (1,276), as reported by MoE (2024, p. 20). Both Lusaka and Southern Provinces are prone to disasters such as flooding, infectious disease epidemics, child marriages and learning poverty, which disrupt learning at all stages.

2.2 Sampling approaches for the study

Participants working in the education and related sectors were selected as key informants for the qualitative interviews. We targeted national government officials from the Ministry of Education and other related ministries, representatives of civil society organizations, global partners in education, school staff (teachers and headteachers), and school management committees.

2.3 Data collection approaches

The research team conducted Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) with relevant stakeholders. Open-ended interview guides were used to

conduct semi-structured interviews and focus group discussions. All KIIs and FGDs were recorded verbatim with voice recorders to enable accurate transcription and analysis.

Key Informant Interviews (KIIs)

A total of 59 KIIs were conducted at the national and district levels. The interviews lasted between 30 and 60 minutes and were recorded using voice recorders. Table 2 shows the distribution of KIIs and FGDs by province and respondent category, indicating the categories from which representatives were selected for interviews.

Table 2: Respondent categories and sample size

Province	Category of Respondent	KIIs	FGDs
Lusaka	Education Partners	5	
	Directorates	6	
	Ministries	8	
	Lecturers	5	
	Primary headteachers	2	
	Secondary headteachers	2	
	ECE teachers	2	
	Teacher Unions	3	
	Primary teachers	1	
	Secondary teachers	2	2
Sub-total		**36**	**2**
Southern			
	Ministries	12	
	Lecturers	1	1
	Primary headteachers	2	
	Secondary headteachers	2	
	ECE teachers	2	
	Primary teachers	3	2
	Secondary teachers	1	1
Sub-total		**23**	**4**
Total		**59**	**6**

At the national level, stakeholders representing the following institutions were interviewed:

- Ministry of Education (MoE) departments such as the Directorate of Early Childhood Education, the Directorate of Primary Education, the Directorate of Secondary Education, the Directorate of Teacher Education and Specialized Services, the Directorate of Curriculum Development, the Directorate of National Science Centre, the Directorate of Standards, the Directorate of planning and policy, the Directorate of Finance, and the Directorate of School Health and Nutrition.
- Ministry of Health, Ministry of Community Development and Social Security, and the Office of the Vice President (Disaster Management and Mitigation Unit).
- Cooperating Partners and Civil Society Organizations working in the education sector were interviewed as follows: World Bank, Zambia National Education Coalition (ZANEC), National Action for Quality Education, Zambia Open Community Schools (ZOCS), VVOB, Zambia Conference of Catholic Bishops, and Christian Council of Zambia.

At the district level, the following stakeholders were interviewed:

- Ministry of Education officials such as Provincial Education Standards Officers (PESOs), District Education Board Secretaries (DEBS), District Education Standards Officers (DESOs), and District Education Planners
- Community Development Officers
- Ministry of Health officials
- Ministry of Local Government officials
- ECE, primary, and secondary school teachers and headteachers
- University and College lecturers

Focus Group Discussions (FDGs)

A total of six FGDs were conducted with teachers, school administrators, and community representatives in the 4 selected districts of Lusaka and the Southern Provinces of Zambia as indicated in Table 2. The category of community representatives comprised purposively selected parents, religious leaders, teachers, and school leaders (headteachers).

Each FGD was conducted in person and constituted 6-10 participants. The FGDs varied in duration, ranging from 45 to 90 minutes. A range of topics were explored during the FGDs, including community perceptions of the meaning and practices of ESR; views on current and future disruptions, risks, and vulnerabilities of ESR; perceptions of ESR vulnerabilities; possible solutions; and recommendations to mitigate future disruptions, risks, and vulnerabilities.

2.4 Data analysis

First, after data collection, all interviews and FGDs were transcribed verbatim by the research assistants who conducted the interviews to ensure accuracy and preserve the nuances captured during the sessions. All transcripts were prepared for analysis through coding, during which they were assigned anonymous identifiers and participants' names were removed. After preparing all the transcripts, the researchers uploaded them to

NVIVO 12, the qualitative data analysis software. All transcripts were coded in line with the research questions that guided the study. At the end of the coding process, themes and subthemes emerged from the data set, representing participants' views on various aspects of ESR that the study sought to explore, in line with the research questions.

This study and its data analysis were informed by an emerging analytical framework on education system resilience (Cameron et al., 2024). The framework outlines five strategic dimensions to guide our understanding of ESR in theory and practice: Strengthen, Anticipate, Plan, Respond and Recover, and Prevent and Mitigate.

Figure 3: Data analysis



- **Strengthening:** This construct guided the analysis of Zambia's education system to address current disruptions and ongoing efforts to meet future demands. It includes areas such as continuous strengthening through improved governance, sustainable financing, teacher capacity development, curriculum relevance, and robust data systems. By exploring this dimension, the study examined whether the system remains reliable and flexible during both normal operations and crises, while addressing challenges such as infrastructure deficits and digital access disparities.
- **Anticipation:** Proactive risk identification is critical in Zambia, where climate change is increasing the frequency of floods and droughts. Therefore, this construct was used to explore whether the education sector engages in risk mapping, early warning systems, and scenario planning aligned with national disaster risk reduction policies to anticipate and mitigate potential disruptions.

- **Planning:** This construct explored Zambia's approach to policymaking and programming, including issues such as system strengthening, risk anticipation, and response measures. For example, the dimension explored whether stakeholders, especially policymakers, pay attention to issues like preparedness through capacity building, resource allocation, contingency planning, and coordination with disaster management authorities. It further guided the exploration of the Zambia's readiness to respond effectively to emergencies, while minimizing educational disruption.
- **Respond and recover:** This dimension explored short-, medium-, and long-term activities to address current disruptions. Effective response mechanisms and recovery efforts are essential to restore education services post-disaster.
- **Prevent and mitigate:** This construct explored approaches to prevent future crises or mitigate the impacts of ongoing ones. These could be achieved through continuous community interaction and engagement, infrastructure improvement, and knowledge/readiness amongst stakeholders, among others.

Embedding resilience across the broader education system strengthens efforts and aligns with Zambia's commitment to multi-sectoral collaboration, inclusive education, and continuous learning. This approach supports the education system's capacity to withstand and adapt to evolving risks, including those posed by climate change and other shocks. By applying this tailored ESR framework, the study analyzes stakeholders' perspectives on the meaning of ESR and associated practices.

2.5 Ethical considerations

Informed consent was obtained from all study participants before the interviews, and participants had the right to refuse to participate in the study, withdraw at any time, or decline to answer any question without penalty. All participants' details and data were kept confidential throughout the research process. Ethical approval was obtained from the University of Zambia Humanities and Social Sciences Ethics Committee (HSSREC).

2.6 Limitations of the study

While the research team successfully addressed all the study's research objectives, the research process was not without limitations. First, due to a number of factors, data collection for the study was only possible toward the end of October 2025, a period when schools were busy preparing for the end-of-year national examinations. This meant that research assistants had to wait a long time before they could access the participants they needed to interview in schools. Second, the research team found it challenging to schedule interviews with some partners, particularly the International Non-Governmental Organizations (INGOs) and government officials, due to their busy schedules.



3.0 FINDINGS AND DISCUSSION

Photo: Magnific

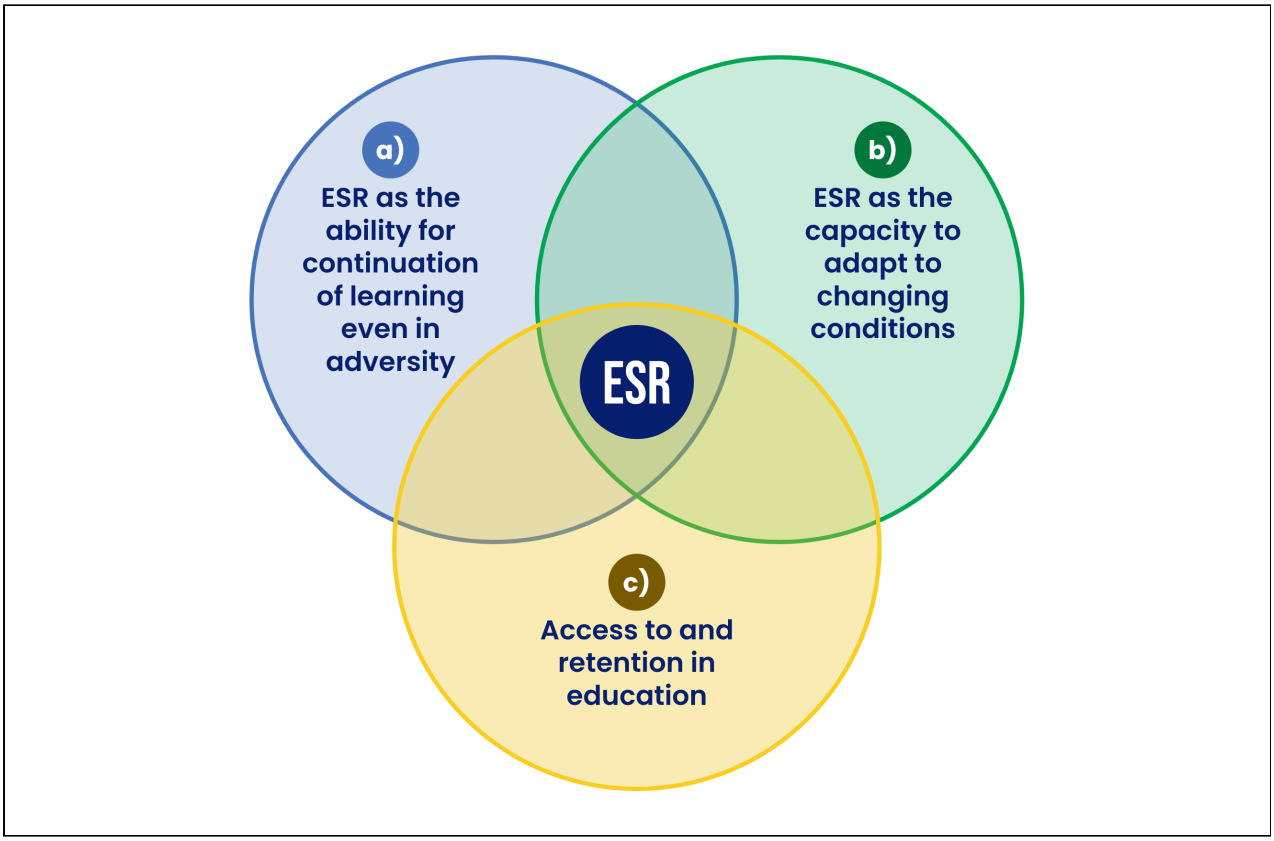
3.1 Meanings and practices of education system resilience

3.1.1 Meanings of ESR in Zambia

The first objective of the study was to explore participants' understanding of ESR. While participants did not provide a uniform definition of ESR, it was broadly understood as the education system's ability to withstand, adapt to, and continue functioning during disruptions that threaten the delivery of educational services.

Analysis of the interview data revealed three interrelated aspects of ESR: continuity of learning and service delivery, the system's capacity to adapt to changing conditions, and the ability to ensure inclusive access and learner retention despite disruptions. In explaining these aspects, respondents identified adequate staffing, infrastructure, teacher preparedness, ICT facilities, and institutional coping mechanisms as capacities that enable the system to remain functional during disruptions.

Figure 4: Meanings of ESR in Zambia



a) ESR as the ability for continuation of learning even in adversity

Participants understood ESR as the education system's ability to continue operating despite internal or external disruptions, such as curriculum changes, floods, and disease outbreaks. Participants stated that a resilient education system is one that sustains learning even under difficult situations, as explained by a secondary headteacher:

> *"A resilient school system for me is a school system that is able to operate even in the face of stressors and shocks."*
>
> – KII, Secondary Headteacher

Similarly, a respondent from the Disaster Management and Mitigation Unit (DMMU) defined ESR as:

> *"...a system that remains functional in the face of a shock. If, for example, you have floods...an outbreak or a disease...a resilient education system is a system that can keep on going even when it is confronted by these shocks..."*
>
> – KII, DMMU

These perspectives demonstrate that continuity of education during a crisis is a central feature of respondents' understanding of ESR.

b) ESR as *the capacity to adapt to changing conditions*

Participants also defined ESR as an education system's ability to adapt to disruptions while continuing to function effectively and to deliver quality education. In explaining the education system's ability to adapt, a secondary school teacher explained:

> *"For a resilient education system, we are looking at the changes that are there and if we are able to manage or get adapted to the changes or not"*
>
> – KII, Secondary Teacher

Similarly, a college principal described ESR as a coping mechanism during times of stress, while maintaining educational standards, as described in the quote below:

> *"...resilience is some kind of coping mechanism, especially when you are faced with tough or difficult situations. How do you cope with that amidst challenges so that we deliver the education standards."*
>
> – KII, College Principal

In this regard, ESR is understood to involve flexibility, responsiveness, and the capacity to adjust educational processes during periods of disruption.

c) *Access to and retention in education*

Finally, ESR was understood as a system that provides education for all, enabling all learners to access and progress through the education system regardless of background or disruptions. Participants linked the free education policy to ESR by advancing universal access from early childhood through tertiary education. As one participant noted:

> *"A resilient education system is one that is able to ensure that the children are able to enter school at early childhood education, and they are retained within the system, and they are able to move from one level to another until they reach tertiary education."*
>
> – KII, Education Partner

This perspective defines ESR as ensuring retention beyond access, supported by policy across the various levels of education.

While respondents primarily defined ESR in terms of continuity of education delivery, adaptation to change, and access to and retention of learners across the various levels of education, they also identified several capacities that enable resilience within the education system, including adequately trained teachers, appropriate technologies, sufficient and inclusive learning facilities, and ICT equipment and infrastructure.

For example, respondents emphasized that resilient education systems require adequately trained personnel and facilities, as a secondary headteacher explained:

> *"...we need to have adequately trained personnel that can provide education to the learners and then we should have enough facilities that can enable us to actually operate even in the presence of those shocks."*
>
> – KII, Secondary Headteacher

Participants also mentioned the need for sufficient and appropriate infrastructure to support continued learning during periods of disruptions such as pandemics:

> *"...the provision of infrastructure that can allow people to operate even in the face of COVID-19, for example. Putting adequate ICT facilities in schools so that even when the learners are not here, a teacher can go to the class and probably provide information, and learners could be able to follow from wherever they are."*
>
> – KII, Secondary Headteacher

Taken together, ESR in Zambia is understood as the education system's capacity to withstand and adapt to a wide range of internal and external challenges (shocks and stresses) while ensuring the continued delivery of education, access, and student retention. Respondents further noted that this system is supported by adequate numbers of trained staff and appropriate infrastructure, including ICT facilities.

It is also worth noting that ESR is viewed as adaptability to change. Stakeholders therefore seem to acknowledge that education service delivery is and will continue to be affected by changes arising from a changing implementation environment, learner needs, curricula, tools and technologies, and that part of ESR is the system's ability to learn and adapt to these changes as they arise.

3.1.2 Current disruptions affecting Zambia's education system

Study participants mentioned several disruptions faced by Zambia's education system. These disruptions include overcrowding and inadequate infrastructure, staffing and financing, early marriages, long distances to schools, disease outbreaks and health-related stressors, drug and substance abuse, and natural disasters and climate-related shocks. Table 3 summarizes these disruptions, their manifestations and their effects on Zambia's education system resilience.

Table 3: Current disruptions affecting Zambia

Current disruption	Underlying drivers and manifestations	Effect on ESR
Overcrowding and inadequate infrastructure	Free education increased enrolment without corresponding expansion of education infrastructure such as classrooms, desks, sanitation facilities, water, laboratories, ECE facilities and age-appropriate furniture/play materials.	Large class sizes; poor learning conditions; compromised education quality; increased disease transmission; disruption of learning.
Inadequate staffing	Teacher recruitment and training have not kept pace with enrolment. Shortages are particularly severe for ECE and specialized subjects, including special needs and computer studies. Rural areas experience higher teacher-to-learner ratios.	Teacher burnout and reduced motivation; limited individual learner support; reduced teaching effectiveness and learning outcomes.
Inadequate financing	Insufficient resources for monitoring, teaching and learning materials, infrastructure maintenance, technology, learner support and practical teacher training.	Weak monitoring and quality assurance; shortages of learning materials and equipment; poor teacher preparation; limited capacity to respond to shocks.
Early marriages and long distances to schools	Early marriages remain prevalent in some rural areas, and this is exacerbated by the long stances that learners must travel to access secondary schools.	Learner dropout and absenteeism; reduced access to secondary education, particularly for vulnerable learners.
Disease outbreaks and health-related stressors	Cholera, diarrhea, dysentery, malaria, and flu/colds, worsened by poor sanitation and overcrowding.	Absenteeism; temporary school closures; disruption of learning; increased vulnerability of learners and teachers.
Drug and substance abuse	Increased availability and access to alcohol and other substances among young people.	Indiscipline, reduced learner wellbeing and potential negative effects on participation and educational outcomes.
Natural disasters and climate-related shocks	Droughts, floods and other adverse weather events disrupt schooling, livelihoods and displace communities. Climate change increases vulnerability.	School closures; household relocation; learner absenteeism; food insecurity and hunger; disruption of learning and reduced learning outcomes.

3.1.3 Practices related to Education System Resilience

The study found that the education system's resilience in Zambia is operationalized through a range of interconnected practices that strengthen its capacity to anticipate, prepare for, respond to, and adapt to disruptions while ensuring continuity of learning. These practices include strengthening collaboration and coordination among education stakeholders; improving policy implementation, leadership, governance, and the use of education data; promoting equitable access through the Free Education Policy and inclusive education; expanding resilient and inclusive education infrastructure; strengthening the teacher workforce through recruitment, equitable deployment, and continuous professional development; implementing school health, nutrition, and learner support programs; increasing sustainable financing for education; mainstreaming climate resilience and future preparedness; and advancing gender equity and inclusive education. Collectively, these findings demonstrate that education system resilience is built through sustained investments in system strengthening, effective governance, and collaborative action rather than through emergency response alone.

Table 4: Practices and policies supporting ESR in Zambia

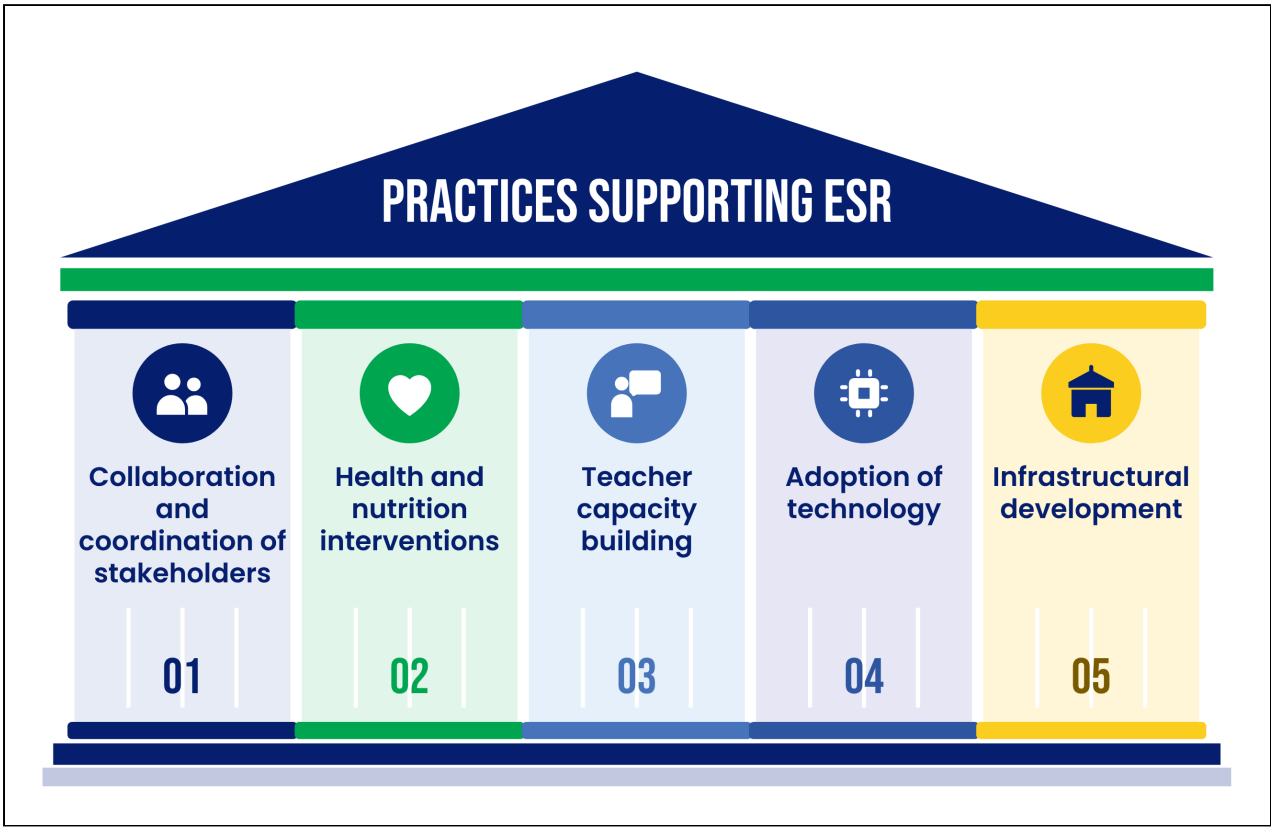
Practice	Effect on ESR
Stakeholder collaboration and coordination	Mobilizes financial, technological, and other resources; supports learner retention, access to learning resources, ICT integration, and responses to disruptions. Coordination aligns partner activities and minimizes duplication and resource waste.
Health & nutrition interventions - School feeding and nutrition support; School-based health services	Improve attendance, retention, learner well-being, and continuity of learning during periods of food insecurity and illness.
Teacher capacity development	Strengthens teachers' pedagogical skills, adaptability, preparedness, and ability to sustain quality education delivery under changing, resource-constrained conditions.
Technology adoption	Supports continuity of learning, communication, and access to information during disruptions.
Building and upgrading infrastructure	Investment in expanding educational facilities to address infrastructure gaps. However, enrolment outpaces infrastructure growth.
Policy	**Effect on ESR**
Free education policy	Reduces economic barriers to education, promoting equitable and universal access.
School re-entry policy	Supports school re-entry for pregnant girls, allowing them to continue with their education

Practices supporting ESR: Initiatives and programs to improve education systems

Efforts to strengthen ESR, as mentioned by participants, largely included stakeholder collaboration and coordination activities, the introduction of health and nutrition

interventions, teacher capacity building, adoption of technology for learning delivery, and infrastructural development.

Figure 5: Practices supporting ESR: Initiatives and programs to improve education systems



Collaboration and coordination of stakeholders

Findings indicate that stakeholder collaboration and coordination among government, schools, communities, NGOs, development partners, and the private sector are key mechanisms for strengthening ESR. For example, participants described establishing partnerships and coordination efforts to support learner retention and performance, improve access to learning resources, and respond to disruptions affecting schools.

Participants described several collaborative interventions implemented through school-level partnerships to strengthen the capacity of schools to cope with disruptions. Many of these interventions focused on improving retention, supporting ICT integration, supporting vulnerable learners, and enhancing access to learning resources. For example, participants highlighted the Keeping Girls in School program, a direct collaborative response to challenges associated with girls' education, as described below by a primary headteacher.

> *"We also have Keeping Girls in School which has just been introduced here in Monze. This program is sponsored by the World Bank in which they support girls to stay in school."*
>
> – KII, Primary Headteacher

Participants further noted that in Chilanga, Airtel, a major private-sector communications company, provides internet routers to local schools to enhance connectivity and support technology integration. One headteacher explained:

> *"...for example, Airtel network providers have come on board to provide routers that are used in the school. This has been done through the Parents Teachers' Association."*
>
> – KII, Primary Headteacher

Similarly, participants in the southern province highlighted the role of several organizations in supporting schools and learners affected by various disruptions. These collaborations include providing school materials, supporting vulnerable children, and implementing interventions to improve girls' education. One District Education Standards Officer explained:

> *"You have to know how to intervene and reduce some of the problems that these children are experiencing. As the Ministry of Education, we have some of those who are supporting. Like CHAZ, supporting children who lack materials at school. ZOCS has also come on board to support."*
>
> – KII, DESO

Regarding coordination, participants explained that the Ministry of Education conducts orientation of district and school officials, engages stakeholders regularly, and maps organizations involved in education to minimize duplication of efforts and maximize the efficient use of resources. As noted by one Provincial Education Standards Officer:

> *"We do orientation for our district officers and our school administrators. We also work with organizations like the World Vision that help us to mitigate certain problems that the schools are facing."*
>
> – KII, DESO

Similarly, an ECE teacher described how systematic stakeholder mapping improved coordination, stating,

> *"Every quarter we call all these stakeholders. We have done what is known as geo-mapping. We have mapped the country in terms of which NGO, which civil societies are operating well, so that at the end of the day, we do not have duplicity and wastage of resources."*
>
> – KII, ECE Teacher

Overall, collaboration activities have mobilized financial, technological, and other resources, while coordination efforts have provided mechanisms to align partners' activities, thereby strengthening the ability of schools to respond to disruptions. Collaboration and coordination not only reflect the government's efforts to build

partnerships with local and international stakeholders to implement programs that strengthen the education system's resilience but also demonstrate the importance of a multisectoral approach to addressing disruptions across the entire education system. However, there was a paucity of voices on collaboration between the education sector and other government entities related to disaster preparedness and management as well as the health sector. This necessitates strategies to increase stakeholders' perception of sectors outside education as crucial to ESR and to ensure that ESR planning is layered to include actors beyond the education sector.

Health and nutrition interventions

Participants identified nutrition- and health-related interventions as key strategies for strengthening resilience in the education system. These interventions, namely the school feeding program and school-based health services, primarily focus on improving learner attendance, retention, well-being, and continuity, particularly for vulnerable learners.

- ***School feeding and nutrition support***

Participants identified the school feeding program as an innovation for building resilience. The program was viewed as helping learners stay in school, particularly those from food-insecure households. A community member noted that the feeding program motivated learners to attend school consistently, stating:

> *"The school feeding program as a strategy makes the learner not miss class because they know even if I don't eat anything at home, I will eat something at school. I remember when we were in school, they used to give us milk, so I never missed school because of milk."*
>
> – FGD, Community

Similarly, this was supported by a primary school headteacher who noted that the school feeding program had reduced absenteeism:

> *"We also have the feeding program where children are fed at school. When there is no feeding program, the children do not come to school. So, there is more absenteeism when there is no feeding, but when they hear that we have received Magwaza [maize], a lot of pupils are back in school, and sometimes we fail to handle the numbers."*
>
> – KII, Primary Headteacher

Another participant explained:

> *"Those learners that are coming from homes where there is no food look forward to going to school because they know that they will have something at school."*
>
> – KII, PESO

The findings suggest that school feeding programs contributed to resilience by reducing absenteeism and supporting learner retention during periods of household food

insecurity.

Participants also referred to broader nutrition interventions implemented through the School Health and Nutrition (SHN) program. An ECE teacher explained that the program served children across age groups, including early childhood learners. Participants also linked these interventions to the Home-Grown School Meals (HGSM) strategy, which provides locally sourced meals to learners in pre-primary and primary schools (GRZ, 2020). Through these initiatives, schools sought to address child malnutrition and food insecurity while promoting learners' well-being and participation in education.

- ***School-based health services***

Beyond nutrition support, participants described school-based health services as another strategy for strengthening resilience. The school-based clinics were reported to address minor illnesses, while serious cases were referred to nearby health facilities. These services were intended to reduce absenteeism due to illness and ensure continuity of learning, in direct response to the impact of disease outbreaks on learning outcomes. A primary school teacher explained:

> *"...for the children who get sick and for us to reduce absenteeism, the government has introduced healthy learner services in schools. We have a healthy learner clinic where children go when they are sick. When children are sick, we advise them to come to school so that they can be attended to. When the illness is worse, we refer them to a nearby clinic or hospital."*
>
> – KII, Primary Headteacher

These health and nutrition interventions strengthen ESR by helping the system respond to food insecurity and ill health, thereby improving learner attendance, retention, well-being, and continuity, particularly for vulnerable learners. These findings further underscore the importance of sectors beyond education in influencing ESR, including the health sector, food security and livelihood diversification, and community development.

Teacher capacity building

Participants identified building teacher capacity as a critical component of strengthening ESR in Zambia. Across secondary and teacher training subsectors, respondents described how continuous professional development, adaptive teaching practices, and collaborative professional training in health and health surveillance strengthen teachers' ability to respond to disruptions and sustain learning.

Participants identified continuous professional development (CPD) as a key strategy for strengthening ESR by enhancing teachers' knowledge, pedagogical competencies, and readiness to respond to evolving educational needs. Respondents described CPDs as ongoing, school-based learning opportunities that equip teachers with new instructional approaches, improve reading and teaching practices, and enable them to adapt to emerging challenges. As one secondary school teacher explained:

> *"I will mention the CPD activities which are done in school. We have programs whereby the teacher is equipped with knowledge on how to do things. We also have reading capacity programs like where we go out, learn new things, and new ways of how we can teach our learners."*
>
> – KII, Secondary Teacher

Participants also noted that CPDs should serve as a platform to orient teachers and other education stakeholders when new policies, programs, or approaches are introduced, ensuring coordinated implementation across the education system. A university lecturer noted:

> *"Firstly, there should be CPDs to orient all the people that are involved in the delivery of education. CPDs should be encouraged so that whenever something new comes through, staff, teachers, and stakeholders are oriented and educated on what is supposed to be done in the education system."*
>
> – KII, University Lecturer

In addition, participants emphasized the need to strengthen teachers' practical resourcefulness through CPDs, particularly by equipping them with pedagogical skills and the ability to develop teaching and learning materials from locally available resources. A lecturer and some secondary school teachers were cited as follows:

> *"Teachers should get continuous professional development, particularly in making teaching aids from local materials."*
>
> – KII, University Lecturer

These findings suggest that CPDs enhance resilience by helping build a workforce that is knowledgeable, adaptable, and better prepared to sustain the delivery of quality education under changing and resource-constrained conditions. However, they highlight specific skill sets that are particularly important for teachers, including pedagogical skills, instructional design, and resourcefulness in scarcity.

Adoption of technology

Participants mentioned that the education system has, to a degree, embraced technology at various levels, including digital learning, as a strategy to adapt to existing disruptions. One participant noted:

> *"This time we are in the technology world, and there is use of ICT, internet of things, artificial intelligence, and I think if we incorporate these technologies into our learning systems, some of these technologies will be able to make our work easier and lighter."*
>
> – KII, National Science

Participants widely acknowledged the growing importance of ICT facilities and digital technologies in strengthening Zambia's education system. One participant observed that access to digital learning was no longer limited to computers, as mobile phones had increasingly become viable education tools:

> *"There is a trend in the education system where most of the parents and the learners are able to understand that actually the phone, not just a computer, can also be used for educational purposes. A long time ago, when you were talking about the Internet, everybody was thinking, I don't have a computer. No, no. But now we are simply saying, whatever you can do on a computer, you can do it on a phone."*
>
> – KII, ECE Teacher

Participants further noted that the emphasis on technology has been closely linked to the education system's adaptation to the COVID-19 pandemic, when learning shifted to digital spaces. For example, participants highlighted the value of online communication platforms such as Zoom and other educational platforms, especially during the COVID-19 pandemic, and noted their potential for continued use in education delivery:

> *"I would also go for Zoom, which has also proven to be key. Because in the COVID era we were communicating via Zoom. The children can also be exposed to learning via Zoom, and that can actually enhance the education system in the country."*
>
> – KII, Health Officer

Participants further stressed the need to strengthen and optimize ICT systems within the education sector. One Standards Officer explained that initiatives under Smart Zambia and the newly established ICT Directorate within the Ministry of Education were aimed at modernizing systems and improving real-time decision-making. They stressed that:

> *"For emerging trends and technology, like through Smart Zambia, we are coming up with digitalization of some of these things and systems which will make the Ministry of Education resilient. Like, for instance, the E-census. There are discussions with Smart Zambia, and a new ICT directorate under the Ministry of Education has been formed. That directorate will now spearhead the modernization of some of these ICT systems, and this will help to make decisions in real time."*
>
> – KII, Standards Officer

Participants also reported that social media platforms such as WhatsApp were increasingly in use:

> *"Schools are able to form WhatsApp groups where we have these learning materials shared and posted so that learners can access them."*
>
> – KII, Planner

Overall, emerging technologies such as ICT, digital learning platforms, and mobile-based learning were identified as key to making Zambia's education system more resilient. These technologies were seen as important for improving access to information, enabling continuity of learning during disruptions, supporting teachers and learners, and strengthening the system's ability to respond to disruptions. Participants noted that the rise of such technologies is not sufficient in itself; the sector needs to invest in infrastructure to support their expansion. It is also worth noting that some technologies are used more than others: For example, Zoom was the most frequently used platform for conferencing, while WhatsApp is popular for networking among teachers, headteachers, and learners at the higher level.

Infrastructural development

Participants identified the construction, expansion, and upgrading of education infrastructure as an ongoing strategy for strengthening ESR, particularly by expanding system capacity to accommodate growing enrolment and alleviate overcrowding. Stakeholders highlighted ongoing government-led infrastructure investments, supported by development partners such as the World Bank and the European Union, including the construction of additional classrooms in secondary schools and the expansion of ECE centers.

> *"There is also the World Bank which has been helping in terms of infrastructure. They have projects like ZEEL that are running within the ministry; they have been helping in terms of infrastructure such as building schools."*
>
> – KII, Secondary Headteacher

While participants acknowledge the government's effort to construct additional infrastructure, they noted that the pace of infrastructural development remains slower than the growth in enrollment. Further, participants emphasized that infrastructural development should extend beyond classrooms to include sanitation, ICT facilities, and laboratories.

> *"The infrastructure shouldn't just be in the classroom. We hope it can also go towards the other parts of sanitation as well as hygiene in institutions."*
>
> – KII, health official

Overall, while efforts to address infrastructure gaps are underway, they are outpaced by the education system's needs. Therefore, increased, sustained, and context-specific investment in infrastructure is essential to ensure the education system can absorb growing demand, maintain safe and inclusive learning environments, and continue delivering learning during disruptions.

Collectively, these findings demonstrate that strengthening the education system in Zambia goes beyond responding to individual disruptions and requires building interconnected institutional, human, social, and technological capacities. Stakeholder partnerships and coordination enhance the mobilization and efficient use of resources,

while health and nutrition interventions address barriers to learners' access and continuity of education. Activities that enhance teachers' capacity through CPD programs and adaptive pedagogical practices strengthen their preparedness for disruptions, even in resource-constrained environments. At the same time, the growing adoption of technology expands opportunities for teaching, learning, communication, and real-time decision-making. Adequate and appropriate infrastructure provides a supportive learning environment and expands access to education. Together, these practices reflect a focus on a stronger, more adaptive, collaborative, and forward-looking education system that is better equipped to anticipate, withstand, and recover from current and future disruptions while maintaining equitable access to quality education.

Policies and guidelines supporting ESR

Participants revealed that through planning, Zambia established policy measures to promote access to education and reduce school dropouts among learners affected by socioeconomic challenges, ultimately strengthening the country's education system resilience. These policies include addressing the provision of free education and the school re-entry policy for pregnant girls.

Participants mentioned that the government introduced the free education policy to cushion students and their families against economic hardships they face and to promote universal access. Regarding the free education policy, it was stated that:

> *"Because of the poor economic status, the government introduced free education, and this has reduced absenteeism. Our classes are full because of this free education."*
>
> – FGD, Teachers

Closely related to this was the re-entry policy, which participants in the study identified as giving pregnant girls another chance to continue their education. A primary school headteacher explained;

> *"If a girl becomes pregnant, she should return to school, and when she feels she can no longer continue, she asks for leave to give birth. We apply for maternity leave. We sign. When she delivers, she comes back to school. We encourage that and have the guidance committee that looks into the counseling of the girl child."*
>
> – KII, Primary Headteacher

However, several participants acknowledge that although these policies exist, their effective implementation is lacking, which weakens continuity. Citing a participant:

> *"Some policies put in place are not being implemented well. What I know is that if a child is married off early, you are supposed to rescue that child; but it is like even if there are some early marriages, we do not care. The parents and the school system do not do anything."*
>
> – KII, Community Development Officer

Notwithstanding these policy provisions, participants noted several challenges stemming from policy implementation and associated planning. First, they observed that the education system lacked adequate dedicated resources to support emergency preparedness and response. While the aforementioned policies prescribe what needs to be done, their implementation has not been adequately supported by the requisite financial and technical resources for effective rollout. As one participant noted:

> *"Our system does not set aside the budget for emergencies. If you are familiar with the budget system, even the 2026 budget that was presented, if you look at that budget, you struggle to find a budget line for contingency. Everything is budgeted according to the requirements. And then you have those situations where you have textbook-to-learner ratios of 1 to 10, and how do 10 learners use one textbook even when learning resumes? So, it all goes back to a limited budget. So, if the budget was adequate, then you quickly respond by bringing in the learning materials so that you fill the gap."*
>
> – KII, Development Partner

Second, they noted that the education system was rigid and overly bureaucratic. Quoting a participant:

> *"Our system is vulnerable, because it is rigid in terms of quick action. Earlier, you remember we said that a resilient system should be flexible and adaptable, but the education system here in Zambia is not flexible. In times of shock or when the system is stressed, and an officer is not there, we don't need all that kind of bureaucracy to make a decision. Things could be getting worse, and you have this bureaucratic system that requires assembling so many people to make a decision. So, our system doesn't allow a quick response to a shock."*
>
> – KII, Development Partner

Although study participants identified policies and practices that they associated with ESR such as provision of free education, school re-entry policy, stakeholder collaboration and coordination, health interventions, teacher capacity building, adoption of technology, and infrastructural development, they did not explicitly mention any policies or practices that directly relate to ESR. For instance, participants did not mention disaster risk reduction, early warning systems, or crisis-sensitive planning, despite identifying natural hazards, particularly floods and droughts, as major disruptions to Zambia's education system. In addition, the country has a comprehensive and integrated policy framework to address resilience, disaster risk reduction, and climate change adaptation across multiple sectors.

This apparent mismatch may reflect several factors. First, stakeholders may have focused predominantly on measures addressing challenges internal to the education system, rather than adopting a broader, multisectoral perspective that recognizes how external disruptions - such as disease outbreaks, climate-related hazards, and conflict - can rapidly affect education systems. Second, the absence of these measures in participants' responses may partly reflect limited probing during the interviews, which may have constrained opportunities for respondents to reflect on resilience practices extending beyond conventional education-sector interventions.

3.1.4 Key stakeholders in ESR policy and programs in Zambia

Participants identified numerous key stakeholders in ESR policies and programs in Zambia. Where possible, examples of what the identified key stakeholders had done are also shown in Table 5.

Table 5: Key stakeholders in ESR in Zambia

Stakeholder	Name	Role	Example
Government	Government of the Republic of Zambia	Inform education priorities and fund education, including implementation of ESR recommendations	-
Government Ministries & Agencies	Ministry of Education Ministry of Finance Ministry of Health Ministry of Community Development Ministry of Agriculture Office of the Vice President for Disaster Management and Mitigation. ZICTA	MoE Plans, coordinates, and implements education policies and ESR interventions; MoF allocates resources according to sector priorities, and other ministries provide specialized support to MoE plans and ESR interventions	During pandemics or epidemics—the education sector relies on health specialists to deal with health-related challenges ZICTA has helped the ministry to buy computers
Policy Makers	Lawmakers (Members of Parliament Area councilors	Formulate and review education policies that bear on ESR. Provide parameters within which the teachers can exercise their duties	-
Education Administrators	At all levels	Implement education policies at school level. Manage teachers, learners, and school resources. Provide data and reports used in ESR.	Administrators are on the ground to implement policies
Teachers	At all levels	Implement education policies at school level. Manage teachers, learners, and school resources. Provide data and reports used in ESR.	-
Learners	At all levels	Actively participate in learning. Provide feedback on teaching and the school environment. Benefit directly from ESR improvements.	-

Stakeholder	Name	Role	Example
Partners / Cooperating Partners	UNICEF UNHCR UNESCO World Bank British Council	Provide financial and technical assistance and support policy reforms and capacity building.	UNESCO has provided us with packages on distance education at different times (KII - College Principal). The World Bank has been helping with infrastructure through projects that are running within the ministry, like ZEEL British Council, which has been quite handy in Zambia, providing education training, scholarships, and materials.
NGOs	RED CROSS World vision CAMFED	Support access to education for disadvantaged groups. Very critical to supplement the government efforts in terms of training materials	
Churches and Faith-Based Organizations	ZCCB CCZ etc.	Supplement education provision at all other levels	Faith-based organizations and churches have a wide network of ECE centers running, especially in rural areas, but also in urban areas.
Community	Traditional Leaders (Chiefs, the headmen etc) Parents	Source of learners, foster school attendance especially for girls and vulnerable learners. Help address cultural practices that hinder education. Participate in Parent–Teacher Associations (PTAs). Support school activities and infrastructure development.	communities were able to supply food

(Source: Field data)

The above findings show that ESR is supported by a wide range of stakeholders who perform interrelated functions. For example, the Ministry of Education not only coordinates but also plays a critical role in policy formulation, teacher education, curriculum development, and in ensuring that the education system remains agile and adaptable to disruptions. The ministry also leads educational delivery. Other government ministries, including the ministries of Health, Finance, Community Development, and Agriculture, as well as the Office of the Vice President for Disaster Management, provide specialized support. For example, during pandemics or disasters, education officials rely on health

and disaster-management experts to guide responses, as affirmed by some participants (FGD Primary Teacher). Further, government agencies such as ZICTA also contribute to ESR by supporting digital infrastructure, including the procurement of computers, which has been crucial in responding to disruptions and expanding access to technology-enhanced learning.

Similarly, cooperating partners, including UNICEF, UNESCO, the World Bank, the British Council, and UNHCR, continued to provide technical expertise, funding, infrastructure development, training, scholarships, and learning materials. For example, UNESCO supports distance education strategies, while the World Bank assists with school construction and infrastructure projects. Others, including the European Union (EU), the Global Partnership for Education, the World Food Program (WFP), the African Development Bank (AfDB), and the African Union, also continued to play a strategic role in strengthening education systems' resilience through infrastructure development, technical support, program initiatives, and system strengthening. This support has also been complemented by contributions from countries such as Finland and other European nations, which have helped strengthen Zambia's education system. Non-governmental organizations, including the Red Cross, World Vision, and faith-based organizations, supplement government efforts by providing materials and training, and by operating early childhood education centers, especially in rural and underserved areas.

Educational institution managers, teachers, and support staff involved in ECE also play an important role in ESR by supporting the implementation of education policies at the school level; managing learners and school resources; and providing data and reports used in ESR. Community members, opinion leaders, and traditional and religious leaders also play an important role. For example, the community (parents, caretakers, family support networks) forms the foundation of the education system by providing learners with support, fostering school attendance, especially for girls and other vulnerable learners; helping address cultural practices that hinder education; and supporting school activities and infrastructure development. Communities, through parent associations and at the individual household level, also support ESR by providing food supplies to learners, such as mealie meal, groundnuts, and other local resources. This support is especially important during times of crisis.

Key stakeholders therefore agree that ESR depends on various players who shape resilient policy development and implementation for sustainability.

It is noted however that the stakeholder's list derived from the data excludes mention of other sectors important to disaster preparedness and response (e.g. the government agencies in charge of disaster response coordination, planning, finance, refugees and migration) as well as sectoral entities involved in disaster prevention and mitigation (e.g. Agriculture, environment, health, road works and building construction, and gender and disability). The education sector in Zambia, therefore, needs to extend its outreach to other sectors to build a coalition for effective ESR capacity strengthening.

Stakeholder coordination: Successes, opportunities and challenges

The findings revealed that stakeholder collaboration has facilitated effective responses to disruptions through inter-ministerial collaboration and partnerships with NGOs, particularly in health-related interventions, online training, and the retention of girls in

schools. These collaborations have strengthened service delivery, learner welfare, and public awareness efforts. For instance, a representative from an NGO observed,

> *"I have seen collaborations among line ministries, where the Ministry of Education collaborates with the Ministry of Health and the Ministry of Community Development to sensitize people about cholera and prevention measures."*
>
> – KII, NGO representative

Similarly, another respondent highlighted successful partnerships with NGOs that improved learners' welfare and access to health services, explaining,

> *"Through collaboration with NGOs, we have established what we call health learner initiatives. Some partners have built health facilities within school premises. These help to ensure that when a learner falls sick, they can be attended to immediately."*
>
> – KII, DESO

However, participants also identified gaps in coordination, including weak collaboration between the Ministry of Education and teacher-training institutions, inadequate communication about policy changes, underutilization of research expertise, and a need for a clear coordination framework and guidelines. These insights are reflected in the following quote from a University Lecturer:

> *"There is a need for collaboration among stakeholders. When you work together, some of these problems can be resolved. It is like we are isolating ourselves from the Ministry of Education as a University."*
>
> – KII, University Lecturer

This suggests the existence of institutional silos that may limit knowledge sharing, joint planning, and coordinated responses to emerging educational challenges. Closely related to insufficient collaboration, participants emphasized the need for stronger coordination and communication mechanisms for policy and curriculum changes. One university lecturer recommended that,

> *"There is a need to strengthen collaboration between the Ministry of Education, teacher training institutions, and other stakeholders. There should be proper communication channels so that any new policies or curriculum changes are well understood by everyone involved in the training of teachers."*
>
> – KII, University Lecturer

This suggests that the current approach to communication and information sharing falls short, creating gaps in understanding and in the implementation of otherwise well-intentioned policies and programs. Findings also indicate the underutilization of

stakeholder expertise, particularly from universities with research capacity, which could support evidence-based decision-making in the education sector. One lecturer noted,

> *"If we collaborate, we (the universities) have the human resources that can conduct research and give feedback to the Ministry."*
>
> – KII, University Lecturer

This suggests that current partnerships do not fully leverage the available expertise and evidence-generation capacity within the ecosystem, particularly the involvement of institutions of higher learning.

Finally, participants, particularly lecturers, called for a stronger coordination framework within and beyond the education sector in Zambia. They identified a need for "clear policies and guidelines" and for continuous research and advocacy, suggesting that coordination mechanisms may not be sufficiently institutionalized, making collaborations dependent on individual initiatives rather than formal structures. There is a need for a cross-sectoral ESR strategy that is embedded in the country's development framework and linked to line sector plans as a cross-cutting consideration.

Overall, strengthening communication channels and institutional partnerships was viewed as necessary for enhancing resilience in the education system. These mechanisms need to be strengthened beyond the education sector.

3.2 Future disruptions to Zambia's education system

3.2.1 Anticipated future disruptors

Participants anticipated that Zambia's education system will face increasingly frequent, interconnected, and complex disruptions that threaten the continuity, quality, and equity of education. Rather than occurring in isolation, these disruptions are expected to reinforce one another, creating systemic vulnerabilities that require integrated, forward-looking responses. The key future disruptions identified by participants include natural disasters, overcrowding and infrastructure deficits, inadequate funding for the education sector, suboptimal policy implementation, planning, and resource allocation, reliance on technology and artificial intelligence, disease outbreaks and drug abuse, teacher shortages and low motivation, and political transitions as outlined in Table 6. Collectively, these findings underscore the need for a proactive, systems-based approach to education system resilience that strengthens the sector's capacity to anticipate, prepare for, respond to, and adapt to an increasingly uncertain risk environment.

Figure 6: Anticipated future disruptors



Table 6: Future Disruptions to Zambia's Education System

Future disruptions and trends	Effects on ESR
Increasing frequency and intensity of natural disasters: drought, floods, environmental degradation	Disruption of learning, damage to infrastructure, isolation and displacement of communities
Overcrowding and infrastructure deficits: inadequate classrooms and sanitation facilities	Expected to worsen with continued enrolment growth leading to reduced education quality, teacher overload, inequitable access
Poor funding for the education sector: insufficient and reducing funding	Limits quality assurance, access to teaching and learning materials, infrastructure development and maintenance, compromises the quality of teacher training, and constrains the ability to respond to disruptions.
Suboptimal implementation of policies, planning and resource allocation	Implementation and planning gaps may continue to undermine responses to recurring and emerging disruptions thereby limiting the system's ability to anticipate, prepare for and respond effectively to shocks. Sound policies are not consistently translated into practice; inadequate long-term planning, coordination, preparedness and contingency budgeting.
Over reliance on technology and artificial intelligence (AI)	Likely to become increasingly significant as use of technology and AI expands. May undermine meaningful learning, learner innovation and, potentially, the role of teachers if poorly managed. Concerns about learner dependence on technology and AI with reduced independent learning and innovation, and potential disruption to traditional teaching roles.
Disease outbreaks (cholera, malaria and respiratory infections) and substance abuse	Disease outbreaks due to overcrowding and poor sanitation and substance abuse are expected to remain significant concerns. These health-related challenges disrupt attendance and learning and may contribute to indiscipline, poor outcomes and wider social problems.
Teacher shortages and demotivation	Shortages and low teacher morale are expected to worsen without improvements in recruitment, retention and teacher welfare. Threatens continuity and quality of learning and limits the effectiveness of other education investments.
Political transition	Future political transitions and changes in government may shift education priorities, policies and curriculum direction. Creates policy and implementation uncertainty and may undermine continuity and gains from existing programmes.

Natural disasters

Overall, participants mentioned that natural disasters, particularly droughts and floods, will continue to be major disruptors of the education system. Zambia faces increasingly erratic and extreme weather patterns that the education system must contend with in the future. Floods in low-lying and rural areas, such as eastern Zambia, routinely isolate communities and render school facilities unusable for extended periods. These climate-related shocks are not random or unpredictable; they are becoming more frequent and severe, making them a systemic rather than an exceptional concern. This reality requires

that education system planning incorporate climate risk analysis and that schools, particularly in vulnerable areas, be designed and resourced to withstand and recover from climate-related shocks.

Some participants said they expected these shocks to become more intense and frequent in the coming years due to climate change. Others linked the trends to environmental destruction caused by human activities, such as deforestation. Overall, these findings show that some major disruptions the education system is currently facing are not incidental but structural and therefore require structural responses.

> *"Droughts, strong winds, and epidemics will remain, because science shows that both the frequency and intensity of these are likely to increase. They will be exacerbated by climate variability and climate change. Climate change will be the main driver."*
>
> – KII, Disaster Management and Mitigation Unit

Overcrowding and infrastructure deficits

One of the most pronounced anticipated disruptions across all levels of the education system is the growing mismatch between enrollment and available physical infrastructure. The introduction of the free education policy, while laudable in its intent to expand access, triggered a sharp, largely unplanned surge in learner numbers that the existing infrastructure was wholly unprepared to absorb. For instance, at the ECE level, only 6,590 of the country's 11,564 primary schools have dedicated ECE space, meaning nearly half cannot meaningfully accommodate the national policy requirement to integrate ECE. At the primary level, classrooms designed to accommodate 40 to 45 learners routinely hold more than 100, with many children sitting on the floor due to a lack of desks. The toilet-to-learner ratios are similarly alarming, with one school reporting only 8 toilets for a population exceeding 1,000 learners. Most secondary schools lack key facilities, and these gaps compromise educational quality.

> *"Now, it is a national policy that every primary school should have an early childhood education component. One of the main shocks at this level is infrastructure. There are not enough classrooms and facilities. When you introduce ECE, it means you now have three additional levels which are the baby, middle, and reception classes. That means more classrooms are needed."*
>
> – KII, DESO

Participants generally believe that this problem will persist and may even worsen, driven by increasing enrollment unmatched with the available infrastructure.

> *"The stressors that I would anticipate are that these numbers of learners will keep rising, and if we don't address the infrastructure, we will have more uneducated learners who have attended school. Some could have gone up to grade 9 or 12 but did not learn anything from school, that is what we expect."*
>
> – KII, College Lecturer

A teacher trainer from one of Zambia's public universities highlighted the impact of the high pupil-to-teacher ratio on education quality, stating:

> *"The teacher-to-pupil ratio in primary schools is too high, so teachers will increasingly not be able to attend to each learner effectively. This will affect the quality of education."*
>
> – KII, University Lecturer

Similar observations were expressed by a planning officer from the National Planning Office in Lusaka, who highlighted the extent of overcrowding in schools:

> *"The classes are flooded with pupils where one teacher is teaching 100 learners in one classroom. We are far away from what the guidelines stipulate, and this will not go away any time soon."*
>
> – KII, National Planner

Poor infrastructure and inadequate learning materials are prominent factors that are expected to increase the vulnerability of Zambia's education system to future disruptions. For instance, an official from the Disaster Management and Mitigation Unit explained that inadequate investment in the education sector will result in poorly constructed infrastructure that cannot withstand disasters:

> *"There is little investment in these schools, and therefore instead of doing something that can withstand the impact, you do shoddy work."*
>
> – KII, DMMU

Overall, these disruptors will persist and could compound into a poly-crisis. Overcrowded classrooms, coupled with poor infrastructure, could lead to absenteeism, low-quality education, and poor academic performance. Therefore, governments and education planners need to treat school infrastructure development as a precondition for expanding enrollment to address overcrowding. Where funding constraints make this difficult, a phased, spatially targeted approach to infrastructure development that prioritizes the most overcrowded and under-resourced areas should be pursued.

Poor funding for the education sector

Participants reported a reduction in funding for Zambia's education sector. Insufficient financial resources compromise monitoring and quality assurance, limit access to teaching and learning materials, impede infrastructure maintenance, and constrain meaningful support for learners. Participants indicated that inadequate funding of the education sector could continue to plague it well into the future. A participant from the World Bank, one of the largest funders of education in Zambia, said:

> *"The Ministry of Education will not have an adequate budget. If you look at the trend, the budget has been reduced from about 14% in 2023 to about 13% in 2024. This means that, should there be any shock to the system, they will not have adequate resources to immediately respond."*
>
> – KII, Education Partner

Furthermore, participants noted that underfunding affects teacher training, which could compromise the quality of future teachers.

> *"The teacher training colleges do not have adequate funds to send teachers for practical sessions, and we are sending most of these teachers half-baked, and they will not even understand what a shock is and how to address it. This is supposed to be part of the curriculum for teacher training at the college level. Even the interventions that are meant to address online learning are supposed to be addressed at the college level."*
>
> – KII, College Lecturer

Inadequate funding would mean trainees receive disproportionately limited hands-on practice, resulting in graduates who struggle to deliver effectively in real classroom settings. The funding gap also undermines the system's ability to anticipate and respond to disruptions because under-resourced institutions often lack the reserves, systems, and capacity to adapt.

Suboptimal implementation of policies, planning and resource allocation

Poor policy implementation is a key constraint on the future resilience of Zambia's education system. Respondents observed that Zambia has, in many cases, developed sound policies, but implementation has remained inconsistent and inadequately resourced. The free education policy expanded enrollment without expanding capacity. The new curriculum was introduced without accompanying materials. Child marriage policies exist but are rarely enforced. These implementation gaps reflect a systemic failure of planning coordination rather than simply a lack of political will.

Participants observed that Zambia's education system is vulnerable to future disruptions due to inadequate planning. The recurrence of predictable disruptions with known and preventable causes implies a gap in resilience that is partly attributable to inadequate planning and prioritization. For instance, a principal from one of the rural teacher training colleges in Southern Zambia observed:

> *"You know, if you don't plan very well, these shocks and stressors will continue occurring year in year out."*
>
> – KII, College Principal

A participant representing an NGO in Lusaka also observed the lack of adequate planning, especially long-term planning and policy formulation.

"Well, it's like things that we talked about, that there are no long-term plans and policies for the country."

– KII, Education Partner

To underscore how inadequate planning and lack of preparedness have contributed to ineffective responses to disruptions in Zambia, another NGO leader observed,

"I think as a country, we've not reached the level where we are able to plan and avoid such occurrences. One factor is a lack of planning and unpreparedness. Even when looking at data from the meteorological department, they might predict rainfall, but when that time comes, things happen differently. So, unpreparedness is the most common factor."

– KII, Education Partner

One of the global education partners further highlighted the lack of budgetary allocations to respond to disruptions in the education system. As they explained:

"And secondly, our system does not set aside the budget for emergencies. If you are familiar with the budget system, even the 2026 budget that was presented, if you look at that budget, you struggle to find a budget line for contingency. Everything is budgeted according to what is required."

– KII, Education Partner

Over-reliance on technology and Artificial Intelligence

Some participants were concerned that overreliance on technology by teachers and learners could become a problem for the education system in the future. For example, university lecturers observed that technology could undermine learners' innovativeness if they relied on it too heavily. One of the lecturers stated:

"Technology might become a shock if not used well, as children may become too dependent on gadgets and lose their sense of innovation. Overreliance on technology will make learners less innovative."

– KII, University Lecturer

Furthermore, several participants expressed concern that in the near future, artificial intelligence (AI) may contribute to disruptions in Zambia's education system. The main concerns were the creation of what they described as 'lazy students', the potential replacement of teachers, and the prevention of 'real learning', as students would rely on what they called 'the easy way out' provided by AI. As expressed by participants in focus group discussions, some students could rely more on AI than on teachers and potentially replace teachers in the future, as explained in the quote below:

> *"It may even happen in a situation whereby a child for some reason doesn't attend school on a particular day. Once they find out the topic that was taught in class, they can go on any of the social media apps and find somebody who could teach them, maybe even better than they could have learned in class. Some teachers will be rendered redundant. Like they won't be needed that much. Because right now, if you just ask AI, it could explain way better. It is so resourceful. So, you find it is obvious that at some point, the teacher will have no use."*
>
> – FGD, Teachers

One of the secondary headteachers observed a concern that AI may prevent learning from taking place, as stated:

> *"If someone is given an assignment, then they go to ChatGPT and type in the assignment, then they can copy whatever it is and submit it to a lecturer, but learning wouldn't have taken place. For someone to actually learn, they should be actively involved in researching, trying to understand this and not just downloading stuff. That can be a serious challenge."*
>
> – KII, Secondary Headteacher

While artificial intelligence is viewed as an effective tool that could make teaching and learning easier, participants observed that it could result in a 'modern world' producing learners who may be too lazy to learn without assistive technology. Put differently, heavy reliance on AI may cause learners to lose sight of the value of hard work and the pursuit of knowledge. It would appear, therefore, that the answer may lie in striking a healthy balance between leveraging AI and maintaining self-discipline to uphold self-responsibility in knowing how to learn and adapt in varied environments.

Disease outbreaks and drug abuse

Participants mentioned that disease outbreaks, particularly cholera, malaria, and respiratory infections, are recurring disruptions to the education system in Zambia and will continue to be so. Overcrowded classrooms and inadequate sanitation facilities at most schools increase the risk of disease transmission and outbreaks. Participants projected that infectious diseases would continue to negatively affect the education system.

> *"The cholera issue has not been addressed. Lusaka, for example, is still amongst the dirtiest cities in Africa. The drainage system has not been done up to now. We have communities that are consuming water that is contaminated."*
>
> – KII, Training officer

Apart from the disease burden, participants raised concerns about the ease of access to alcohol and illicit drugs among students, which could evolve into a major crisis in the future. This has led to a growing burden of drug abuse, with participants indicating that this could potentially lead to an increase in crime. An FDG participant reported that:

"In each township, every corner of the street has bars. There are no rules whatsoever or any restrictions as to who should access alcohol. Cheap alcohol is being accessed by anyone including learners and underage children. I think the whole nation will suffer in the end, because as we move forward, because of the abuse of drugs and indiscipline, we will not produce any responsible citizens."

– FGD, Teachers

Teacher Shortages and motivation

Study participants noted that the severe shortage of teachers across all levels of Zambia's education system is expected to worsen. This is particularly pronounced in ECE, where the teacher-to-learner ratio is higher, partly reflecting a supply problem, as few college students choose to specialize in early childhood education. An ECE teacher stated:

"Currently, our learner population in ECE stands at 671,000 plus against 4,650 teachers."

– KII, ECE Teacher

Similarly, wide gaps in teacher availability are evident in primary schools, especially in rural areas, where the teacher-to-learner ratio exceeds 100 pupils per teacher. This compromises the teacher's ability to deliver education, as noted in the quote below:

"You see, as a teacher in a class of 150 learners, for sure I will not perform because I have been punished. That is a punishment on the part of the teacher, giving me 150 learners. So, I will just report because it is my duty."

– KII, Primary Teacher

At the secondary school level, the shortage of teachers is more pronounced in specialist fields such as special needs education and ICT, where trained teachers are in critically scarce. A secondary school teacher noted that:

"I would say maybe it's a lack of teachers in the special unit system because we find that most of the time, we have a challenge with teachers who are able to teach learners with disabilities."

– KII, Secondary Teacher

Relatedly, teacher morale is a particular concern, as participants reported that work overload, low pay, and limited materials have substantially affected teacher motivation and performance. This trend is likely to worsen if there is no major change in teacher welfare and support systems. A demotivated teaching workforce, within an already stretched education system, poses a critical risk to the continuity and quality of learning, because without effective teachers, no other investment in infrastructure, curriculum, or funding can deliver its intended returns. In explaining how demotivated teachers influence the quality of education, a primary school headteacher stated:

> *"You will find that we have few teachers in classes who are demotivated, and because of that, they will not put in much effort, which will lead to poor performance. The primary section is the one that feeds learners into secondary, and if the teachers don't put in their best, they will produce learners who are half-baked."*
>
> – KII, Primary Headteacher

Therefore, the discourse needs to shift to focus on making teaching conditions and remuneration attractive to recruit and retain well-qualified teachers, particularly in rural areas and specialized disciplines.

Political transitions

Some participants also observed that changes in government can disrupt education programs, particularly through shifts in policy direction and curriculum reforms that affect implementation continuity. Participants said that gains in the education sector could be undermined if a new government adopts different priorities, especially if education is not prioritized. Participants note:

> *"The priorities for a new government may be different from what exists now. The current government has placed a high premium on education. This means that they have valued education."*
>
> – KII, PESO

An example cited was the 2023 curriculum review in Zambia, which shifted from an outcomes-based to a competency-based curriculum. While this change was generally viewed positively, some stakeholders felt there was insufficient time to prepare for the transition. Concerns were also raised that future government changes could lead to further shifts in curriculum direction, potentially reversing or altering current reforms. Such politically driven changes were seen as a potential source of stress and instability within the education system.

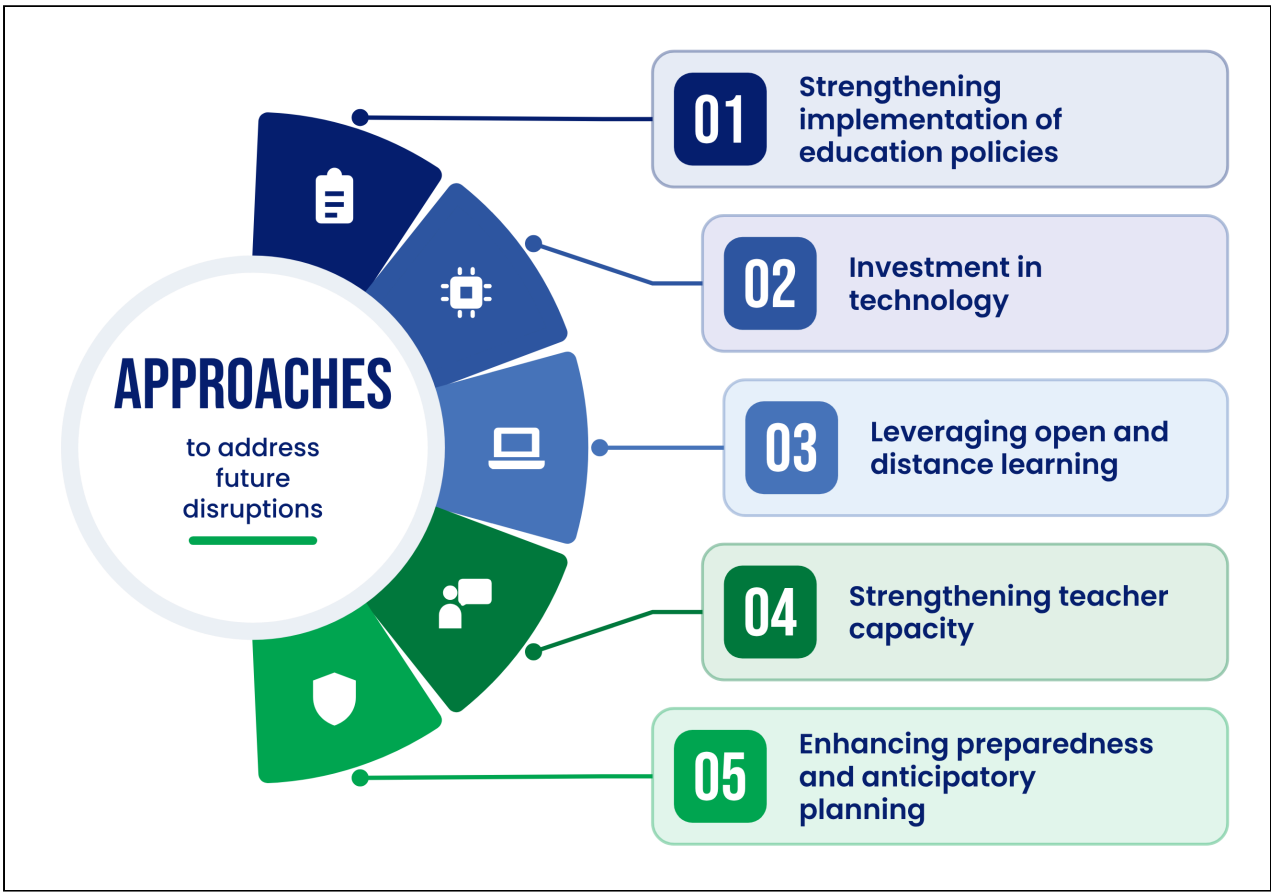
It should be noted that for most potential future disruptors, the country is already familiar with them, as they have occurred before. The country can draw on lessons from past events and conduct modeling to assess what would happen if these shocks occurred at a much higher magnitude than in the past, due to major changes in the implementation environment. For example, the extent to which climate change will increase infrastructure collapse as adverse climate events intensify sharply. On the other hand, there are potential future shocks for which the country has had limited experience, with concerns about the negative effects of technology on learning at the forefront. For these kinds of future shocks, more evidence is needed to guide policymakers on how to mitigate them.

3.2.2 Approaches to address future disruptions

Participants identified a range of complementary approaches to strengthen the resilience of Zambia's education system to future disruptions. They emphasized that future resilience will depend not only on responding effectively to crises but also on strengthening existing systems and building the education sector's capacity to anticipate,

prepare for, withstand, adapt to, and recover from emerging risks. Key approaches include strengthening the implementation of existing education policies, making targeted investments in technology, leveraging open and distance learning, strengthening teacher capacity through continuous professional development, and enhancing preparedness and anticipatory planning. Across these areas, participants underscored the importance of sustained investment in infrastructure, human resources, financing, and institutional capacity to ensure that resilience-building efforts translate into improved continuity, equity, quality, and adaptability of education in the face of future disruptions.

Figure 7: Approaches to address future disruptions



Strengthening implementation of education policies

Findings indicate that Zambia already has good policies in place. However, participants observed that poor implementation of these policies was leading to suboptimal education outcomes. While policies such as the Free Education Policy and the Re-entry Policy for pregnant girls were widely viewed as appropriate instruments to address current and future disruptions, participants stated that their intended benefits have not been fully realized because implementation has often been inadequately supported. They emphasized that strengthening the implementation of existing policies should be a priority for improving the education system's resilience to future disruptions.

Participants supported continuing the free education policy because it expands access to education and reduces barriers to school participation during and after periods of disruption. In addition, participants noted that the policy could reduce illiteracy and help

more children remain in school. Participants also noted that the policy's success depends on complementary investments in infrastructure, human resources, and learner welfare. As a teacher in the focus group discussion explained:

> *"The free education policy is positive. I think we will have fewer illiterate people because almost everyone would have attended school. They will be able to communicate one-on-one. If free education is going to be supported with the right infrastructure and human resources, then we expect to have a future that is going to have fewer illiterate people."*
>
> – FGD, Teachers

Similarly, participants identified the longstanding Re-entry Policy as an important mechanism for mitigating the negative consequences of adolescent pregnancy and early marriage. Although the policy has existed since 1997, participants noted that stronger enforcement and implementation would help ensure that all affected learners can continue their education during disruptions.

While participants supported existing inclusive education policies, they argued that their implementation should ensure that all vulnerable learners receive adequate support. For example, participants noted that programs supporting girls' education had expanded considerably but expressed concerns that there were no similar programs to support vulnerable boys. They recommended a more balanced approach that addresses both boys and girls while maintaining commitments to gender equity. One primary school headteacher expressed this concern stating:

> *"I think children should be treated equally. I have seen a number of NGOs coming on board to help the girl child. How about the boy child? It is not only the girl child who is vulnerable, who needs care. Most of the programs that are coming on board are helping the girl child. Here in Monze, I have never heard of a program that is working to improve the life of the boy child. We need to encourage the NGOs and the government to take care of the boy child."*
>
> – KII, Primary Headteacher

Beyond policy implementation, participants recommended increasing funding for the education sector to support policy objectives. They stated that expanding infrastructure, improving ICT and learning resources, and ensuring adequate teacher recruitment would enable existing policies to achieve their intended outcomes and strengthen the education system's capacity to withstand future disruptions.

Overall, the findings suggest that although significant policy progress has been made, policies such as Free Education and Education for All require corresponding investments in infrastructure, teaching and learning resources and inclusive support mechanisms if their full resilience benefits are to be realized. Although participants identified these policies associated with ESR, they did not explicitly discuss policies relating to disaster risk reduction, early warning systems, or crisis-sensitive planning and how these could be strengthened going forward. This mismatch may indicate a predominantly education-sector-focused understanding of resilience that gives limited attention to external shocks, although insufficient probing during interviews may also have constrained participants'

reflection on broader, multisectoral resilience practices. Participants emphasized the need to strengthen implementation, improve financing, and ensure that policy commitments are matched with the infrastructure and human resources required for effective delivery.

Investment in technology

In view of a future where technology is expected to be at the forefront, participants suggested that schools should begin adapting by making ICT a compulsory subject in all schools and actively investing in technology. One secondary school headteacher suggested enacting a policy to allow that to happen, stating:

> *"It should be a policy that in every school, we have a practice that teachers provide ICT lessons to learners."*
>
> – KII, Secondary Headteacher

One university lecturer pointed out that using technology would help teachers better manage large classes, and that with ICT knowledge and digital literacy, students would be able to use computers, the internet, tablets, and phones for educational purposes.

> *"Digital technologies can also enhance resilience by supporting teachers in large classes. Children can access stories or lessons through computers, internet, tablets or phones, allowing teachers to guide instead of always instructing directly. These tools help address teacher shortages and make learning more interactive."*
>
> – KII, University Lecturer

In addition, an NGO leader emphasized that ICT and digital literacy skilling should also be made compulsory at teacher training level.

> *"I think the fact that we have made ICT compulsory now, and also, we are thinking of making ICT compulsory in the pre-service for all teachers, becomes very important. The other thing, of course, is the connection of our schools to the internet, which the ministry is very committed to doing, and the provision of computers, which is happening in the schools."*
>
> – KII, Partner

Leveraging open and distance learning

Participants mentioned that the introduction and expansion of distance learning will become increasingly important in the future and that there is a growing demand for education and continuity of learning beyond the traditional classroom setting. They also noted that distance learning would address challenges related to limited space and the growing demand for training programs.

"It is going to give skills that will ensure that learning can take place outside the classroom, which is very important for our education system. For the university, if you look at higher learning institutions, the future of UNZA is distance education. When you look at the applications coming to UNZA versus what you accept, you will see that the future of UNZA may not lie in the provision of education within the four walls, but it lies in what the institution has done by creating distance education. It lies in open and distance education, because that is what allows you to cope with the demand. You cannot build as many hostels, as many lecture rooms as the demand is."

– KII, Partner

Further, participants revealed that distance education will be very beneficial where physical presence of a teacher is not a mandatory requirement for learning.

"If we are able to enhance that learning mode at a distance, it can help where we don't need the physical presence of a teacher, but you can deliver lessons online."

– KII, Partner

Similarly, a participant responsible for school health programs highlighted ongoing collaboration to strengthen online school health training. They explained that:

"There is close collaboration between our Department of ICT and our Department of Open and Distance Education to ensure that we are able to offer lessons online."

– KII, School Health Officer

Overall, the findings suggest that investing in technology and the widespread adoption of distance-learning modes are key strategies for making education systems more resilient in the future. The findings show that, given funding constraints in the education sector, other modes of education delivery that do not require the construction of physical infrastructure should be explored. However, these findings do not negate earlier findings that technology dependence can stifle learning as learners increasingly rely on AI. Efforts to expand technology use should therefore maintain awareness of the need to balance its use to promote learning.

Strengthening teacher capacity

Participants stated that there is a need to strengthen the capacity of teachers and other stakeholders in the education system. Respondents emphasized the importance of continuous professional development, in-service training, and curriculum-responsive teacher preparation to ensure that teachers possess the skills required to respond effectively to emerging disruptions. For example, some participants noted that teacher training programs should evolve alongside curriculum reforms and changes in pedagogy. One respondent noted such an evolution when they said:

> *"So even the training now is changing to suit the new curriculum, which is hands-on, competency-based and outcome-based."*
>
> – KII, primary headteacher

At the same time, regular orientation and professional development opportunities should be provided to ensure educators remain informed about new policies and practices.

> *"Firstly, there should be CPDs to orient all the people that are involved in the delivery of education. CPDs should be encouraged so that whenever something new comes up, staff, teachers, and stakeholders are oriented and educated on what is supposed to be done."*
>
> – KII, University Lecturer

Similarly, participants highlighted the importance of capacity building in emerging teaching approaches, as emphasized by a government official.

> *"We also do capacity building for in-service teachers for example on new pedagogy."*
>
> – KII, Government Stakeholder

These efforts were viewed as critical for building a workforce capable of adapting to changing circumstances and maintaining quality education during periods of disruption.

Enhancing preparedness and anticipatory planning

Participants also stressed the importance of shifting from reactive responses to disruptions to proactive planning and preparedness. Respondents argued that education institutions should strengthen their capacity to anticipate and prepare for future disruptions. One stakeholder highlighted the importance of preparedness activities, disaster risk reduction, and ongoing efforts to enhance preparedness, stating,

> *"To help institutions concentrate on what we call 'activities before a disaster actualizes', enhancing their preparedness levels is important. That's what we are doing in the education sector."*
>
> – KII, DMMU

Overall, the findings suggest that respondents viewed future education system resilience as dependent on a combination of strengthening the implementation of education policies, investment in technology, harnessing open and distance learning, strengthening teacher capacity, and enhancing proactive preparedness and planning. Such systems would be better positioned to anticipate future shocks, maintain continuity of learning during crises, and adapt effectively to changing educational needs and circumstances.

3.3 Vulnerability factors and vulnerable groups

The most vulnerable groups in the education system are learners, particularly those in ECE and lower primary grades, girls, children from underprivileged or rural households, and learners with disabilities. ECE children are especially vulnerable because their immune systems are weaker, their learning environments are often deplorable, and they depend heavily on parental support for mobility and daily care. Similarly, learners from low-income families struggle due to limited resources, a lack of alternative learning materials, and dependence on public education systems that are often disrupted by floods, cholera outbreaks, or other shocks. Girls and women also face additional vulnerabilities embedded in the social, cultural, and economic web. Accordingly, early marriages, teen pregnancies, and sexual abuse frequently disrupt their schooling, especially in rural areas where families may prioritize immediate economic returns over education. Teachers, parents, and schools themselves are also vulnerable. For example, teachers work under poor conditions with limited resources and low motivation, while parents in low-income families struggle to support learning at home. By and large, a combination of these factors limits access to quality, inclusive education and increases the risk of school dropouts, learning disruptions, and setbacks in long-term educational goals. The most vulnerable groups and the reasons for their vulnerability are shown in Table 7.

Figure 8: Vulnerability factors and vulnerable groups

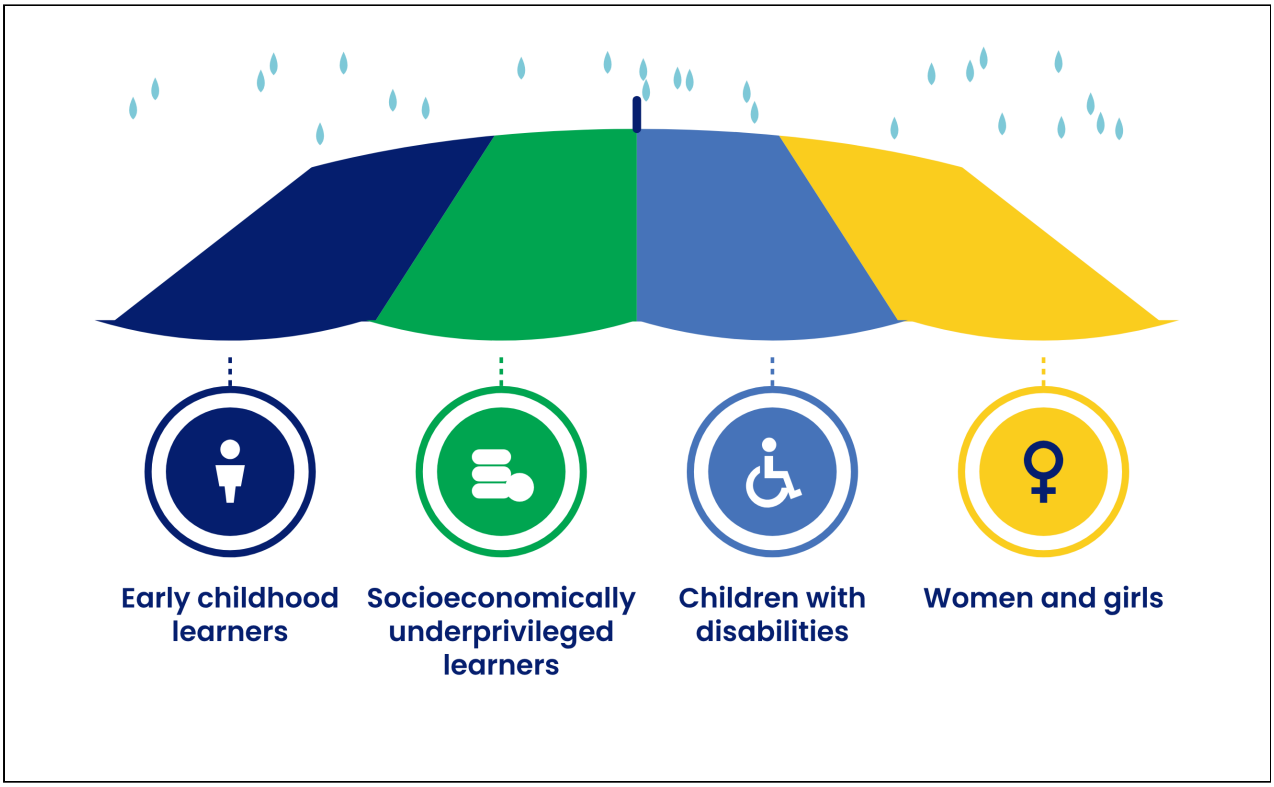


Table 7: Vulnerable Groups to current shocks and stressors

Category	Reasons for Vulnerability	Coping Strategies
ECE and Grade 1 Learners	Young children are highly vulnerable due to weak immunity, dependence on parents, poor learning environments, and inadequate preparation for early grades.	Improved ECE centers, technology integration, school feeding programs
Underprivileged / Low-Income Learners	Lack of resources, reliance on public education, inability to cope with shocks	Bursaries, free education policy, stakeholder support
Girls / Female Students	Early pregnancies, early marriages, sexual abuse, cultural pressures	Re-entry policies, guidance & counseling, support from NGOs (e.g., FAWEZA)
Learners with Disabilities	Dependence on specialized support and assistive technologies, inaccessible learning environments	Inclusive classrooms, assistive devices, specialized teachers
Rural & Hard-to-Reach Learners	Poor access to schools, disaster-prone areas, and limited resources	Technology (digital learning, mobile platforms), NGO and government support
Teachers	Poor working conditions, limited resources, and low motivation	Professional development, technology tools, stakeholder support
Women / Adult Learners	Past gender biases, illiteracy, and socio-economic challenges	Adult learning programs, community support, and advocacy for gender equality
Other Groups (Boys, Orphans, Child-Headed Households)	Drug abuse, cultural practices, and family challenges	Guidance & counseling, bursaries, stakeholder support

Source: Field data

To better understand vulnerability within the education system, study participants were asked to identify groups they considered most vulnerable to future disruptions.

Early childhood learners

Participants noted that children at the ECE level were among the most affected by disruptions and will remain the most vulnerable to future shocks. An ECE teacher explained that these young learners are especially vulnerable during events such as floods and disease outbreaks such as cholera. Participants also noted that children in this age group have weaker immune systems.

> *"These children under ECE are vulnerable and during floods and cholera, they are protected by their parents who stop them from going to school. Children in ECE are young, whose immunity is not as strong as the older ones. They need parents to sustain their movements from one place to another making them vulnerable."*
>
> – KII, ECE Teacher

According to a Ministry of Education official, early childhood education has faced persistent challenges. They explained that these challenges stem in part from its initial placement outside the Ministry of Education's mandate, resulting in limited investment and oversight and contributing to inconsistencies in its development and implementation. These sentiments were also expressed by an education planner:

> *"ECE has had a lot of challenges from when it started because initially it was never run by the Ministry of Education. Therefore, there has been a lot of turbulence in the way we have been handling ECE."*
>
> – KII, PESO

Socioeconomically underprivileged learners

Participants mentioned that learners from underprivileged backgrounds were very vulnerable to disruptions in the education system. A secondary school headteacher noted that such learners often lack the resources they need to cushion them against disruptions. They explained that their socioeconomic limitations restrict the choice of schools they can attend and other education services they consume.

> *"They are not empowered and they lack resources to cover losses from shocks that may actually come their way. What do I mean? For example, if someone comes from a home that is privileged, they can afford to go to better equipped schools and so they don't have to come here. Here, they are meant to accept whatever it is that is provided."*
>
> – KII, Secondary Headteacher

Another category of underprivileged groups identified was learners from households headed by grandparents or single parents, particularly those headed by women. According to a university lecturer, these learners come from financially constrained households and are vulnerable to disruptions due to limited economic support.

> *"The ones that are vulnerable are the learners who are coming from families that have financial problems. Maybe we can classify those families as grandparent-headed families or single-parent households, especially female-headed ones. Those are the ones that are vulnerable because households with finances can afford to take their children to private schools which are better resourced."*
>
> – KII, University Lecturer

Children with disabilities

Learners with disabilities were identified as highly vulnerable to disruptions. Participants explained that these learners will be particularly disadvantaged in the future for the same reasons they are now, because the system is not adequately prepared to support them. They noted that even minor disruptions in the school setting will have profound effects on these learners. Citing some participants:

> *"We have learners with hydrocephalus, autism, and cerebral palsy and they need special care. Those who are physically impaired need an environment where wheelchairs can go anywhere. If you talk about the visually impaired, you need to customize their materials for Braille, and the hearing-impaired learners have telegraphic language. All those aspects, if they change, it means you have lost the learners."*
>
> – KII, College Lecturer

Participants also observed that some learners were faced with multiple vulnerabilities, a situation which exacerbated their predicament, as reported by a secondary school teacher;

> *"Unfortunately, you find that most learners who are in special education are orphans. One can be visually impaired, but you find that they are also double orphans, and I don't know why it is like that."*
>
> – KII, Secondary Teacher

Women and girls

Several participants indicated that girls are among the most vulnerable groups to future disruptions. They noted that household shocks, such as drought and economic hardship, disproportionately affect girls compared with boys. Participants further highlighted that during political crises, girls and women often bear a disproportionate burden of sustaining household livelihoods and survival, potentially increasing their vulnerability to educational disruption.

> *"I would say the most vulnerable groups in the future will be women or girls. Let's talk about the drought. During drought, men will abandon their family and go somewhere; sometimes they disappear in the morning and return late; the woman is left to tend to the family. For the school-going children, the girls are the most vulnerable because when they have nothing, the men and other boys will take advantage of their situation. These dynamics will continue to affect our girls."*
>
> – KII, PESO

Participants reported that girls were more vulnerable to abuse, including early marriage, bullying, peer pressure, sexual abuse, and unequal opportunities. A community development worker from Lusaka linked the vulnerability of girls and women to persistent structural inequalities in access to education and resources when they said:

"Most of the women never had a chance to go to school, maybe because of home conditions. Parents couldn't afford education. Others may have gotten pregnant at an early age. So, the women make up a larger proportion of the illiterate. It is today that society is beginning to appreciate women, way back they would rather educate a boy thinking that he would be more responsible in running the family than the girl child. So, if they were to choose who to prioritize, they would rather send the boy child to school than the girl child."

– KII, Community Development Officer



4.0 CONCLUSION AND RECOMMENDATIONS

Photo: YuliiaLakeienko / Magnific

4.1 Conclusion

This study reveals that education system resilience in Zambia is neither understood nor practiced as a single, static concept. Rather, stakeholders view it as a dynamic process that ensures continuity of learning, adapts to changing circumstances, maintains equitable access, and strengthens institutional capacities to anticipate and respond to disruptions. These conceptualizations of ESR show that resilience in Zambia is interpreted through the practical realities of service delivery rather than through abstract systems theory. Stakeholders consistently associated resilience with functioning schools, capable teachers, adequate infrastructure, collaborative partnerships, and the ability to continue educating learners despite adversity.

The study further shows that resilience is not determined solely by the presence of policies and strategic frameworks. Zambia has developed an extensive policy environment that supports education resilience through free education, disaster risk reduction, climate adaptation, inclusive education, and emergency preparedness. However, the findings revealed that resilience is constrained by weak implementation, inadequate financing, limited institutional flexibility, shortages of teachers and infrastructure, and uneven coordination across governance levels. These findings reinforce emerging evidence that resilience depends less on policy existence than on the institutional capacities and governance arrangements that enable policies to be implemented effectively.

The findings also demonstrate that education systems increasingly operate within complex, interconnected risk environments. Rather than isolated shocks, Zambia faces interacting disruptions arising from climate change, disease outbreaks, technological disruptions, economic constraints, infrastructure deficits, and persistent social vulnerabilities including poverty, disability, and gender inequalities. These overlapping risks create conditions in which one disruption amplifies another's effects, exposing systemic vulnerabilities that cannot be addressed through sector-specific interventions alone.

An important contribution of this study is the recognition that resilience extends beyond emergency preparedness and crisis response. Participants consistently identified practices such as school feeding programs, continuous teacher professional development, stakeholder collaboration, and adoption of technology as central resilience-building interventions. These findings challenge narrower interpretations of ESR that focus predominantly on disaster management or emergency response and instead suggests that resilience is built through routine investments in education quality, equity, governance, and institutional strengthening.

Looking ahead, stakeholders anticipate that future disruptions will be more frequent, interconnected, and less predictable. Therefore, resilience cannot be built through reactive approaches alone. Education systems must become increasingly anticipatory, using evidence, data, early warning systems, scenario planning, and adaptive governance to prepare for emerging risks before they disrupt learning. This requires shifting from crisis management to resilience-oriented system transformation that embeds flexibility, learning, and continuous adaptation into everyday educational planning and management.

Overall, this study contributes important empirical evidence to the evolving field of education system resilience by demonstrating that resilience is both context-specific and systemic. While many elements of Zambia's experience reinforce existing global frameworks, the study also highlights the importance of grounding resilience within local realities, recognizing implementation as the critical determinant of resilience, and acknowledging that strengthening education systems and building resilience are inseparable objectives. The findings converge with existing global frameworks in several respects, particularly in emphasizing preparedness and risk management, continuity of learning, stakeholder collaboration, equity and inclusion, and the importance of strengthening the capacities of education systems to anticipate, absorb, and adapt to disruptions. However, the study also extends these frameworks in important ways. First, the Zambian experience highlights the importance of context in shaping how resilience is understood and operationalized, suggesting that broadly applicable resilience principles need to be interpreted in relation to local institutional, socioeconomic, and environmental realities. Second, the findings draw particular attention to implementation as a critical determinant of resilience. The existence of policies, plans, and institutional mechanisms does not in itself ensure resilience; their effectiveness depends on the capacity of actors and institutions to translate them into practice. Third, the findings reinforce the view that education system strengthening and resilience building are not separate objectives. Investments in infrastructure, teacher capacity, governance, technology, equity, and other core system functions can simultaneously improve routine system performance and strengthen the system's capacity to withstand and adapt to future disruptions. In this sense, the Zambian case does not fundamentally challenge existing resilience frameworks but adds empirical nuance by showing that their effectiveness depends on contextual adaptation and implementation capacity. As future disruptions become increasingly complex, resilience should be understood not as a destination, but as an ongoing process of strengthening education systems to safeguard learning, equity, and human capital development.

4.2 Recommendations

Zambia's education system stands at a pivotal moment, facing increasingly complex challenges that threaten equitable access, quality, inclusion, and continuity of learning. The findings of this study demonstrate that, while Zambia has established a strong policy foundation for education, persistent implementation gaps, resource constraints, climate-related risks, and emerging social and technological disruptions continue to undermine the system's resilience. Building a resilient education system therefore requires moving beyond reactive responses to crises toward a proactive, systems-oriented approach that strengthens the capacity of the education sector to anticipate, prepare for, respond to, recover from, and adapt to future disruptions. The following recommendations are organized around key strategic pillars for strengthening education system resilience in Zambia.

01 **Strengthen equitable access to education through free and inclusive education:** The Ministry of Education should strengthen the implementation of the Free Education Policy by extending free Early Childhood Education (ECE) to all eligible children and eliminating remaining financial barriers that prevent

participation, particularly among vulnerable and marginalized groups. Beyond abolishing school fees, the Government should provide targeted support for uniforms, transportation, textbooks, assistive devices, and other essential learning materials to ensure that no learner is excluded because of poverty. Attention should be given to girls, learners with disabilities, children living in rural communities, and other disadvantaged groups.

02 **Expand resilient and inclusive education infrastructure**: The Government should significantly increase investment in safe, inclusive, and climate-resilient education infrastructure across all levels of education. The expansion of classrooms should keep pace with increased enrollment resulting from the Free Education Policy, particularly in rural areas and secondary schools, where overcrowding is most severe. Infrastructure development should prioritize Early Childhood Education centers, libraries, laboratories, sanitation facilities, digital learning spaces, and recreational facilities. Universal design principles should guide all new construction to ensure accessibility for learners with disabilities. Furthermore, school infrastructure should be designed or retrofitted to withstand floods, droughts, storms, and other climate-related hazards, thereby reducing disruptions to learning during emergencies.

03 **Strengthen the teacher workforce:** Addressing teacher shortages remains fundamental to strengthening education system resilience. The Ministry of Education should accelerate the recruitment, deployment, and equitable distribution of qualified teachers across ECE, primary, and secondary education, with particular attention to STEM subjects and underserved rural communities. Teacher education institutions should prioritize training additional ECE teachers while integrating inclusive education, disability-responsive pedagogy, digital literacy, and learner-centered approaches into all pre-service teacher education programs. The MoE and education partners should institutionalize Continuous Professional Development (CPD) across all education levels to ensure teachers remain responsive to emerging pedagogical innovations, technological developments, and future disruptions. Improving teacher motivation through competitive remuneration, better working conditions, housing support, and transparent career progression pathways will also enhance teacher retention and overall system resilience.

04 **Expand school health and nutrition programs:** School feeding programs should be expanded across Early Childhood Education centers and vulnerable primary schools through strengthened collaboration among Government, communities, local farmers, development partners, and the private sector. These programs should be recognized as both social protection and education resilience interventions that improve attendance, retention, nutrition, and learning outcomes. Schools should also provide comprehensive learner support services, including psychosocial support, academic counselling, health services, and referral mechanisms for vulnerable learners.

Attention should be given to adolescent mothers, learners with disabilities, children affected by poverty, and learners experiencing trauma or other social vulnerabilities.

05 Strengthen stakeholder collaboration and emergency preparedness: Collaboration among government ministries, provincial and district education offices, schools, communities, civil society organizations, development partners, and the private sector should be strengthened through institutionalizing stronger coordination mechanisms to improve planning, implementation, and emergency response. In addition, regular stakeholder consultations and information-sharing platforms should be established to ensure that policies are informed by local realities and that education stakeholders can respond collectively to emerging challenges. The Government should also strengthen inter-ministerial coordination mechanisms to improve preparedness for future crises such as pandemics, climate-related disasters, and economic shocks. Teachers, school leaders, and education managers should receive regular training in emergency preparedness, continuity of learning, psychosocial support, and disaster risk management.

06 Strengthen policy implementation, leadership, and governance: The study found that Zambia possesses an extensive policy framework for education, but implementation remains inconsistent. The priority should therefore be to strengthen implementation rather than develop additional policies. The government should establish robust monitoring, evaluation, and accountability mechanisms to ensure effective implementation of existing policies. Policy formulation and review processes should institutionalize meaningful participation by district education officials, school leaders, teachers, parents, and communities to improve policy relevance and ownership. Leadership development programs should strengthen the capacity of education managers in adaptive leadership, crisis management, strategic planning, resource mobilization, and resilience-building. Education Management Information Systems (EMIS) should be strengthened to support evidence-based planning, vulnerability monitoring, resource allocation, and informed decision-making at all levels of the education system.

07 Increase sustainable financing for ESR: Strengthening the resilience of education system will require substantially increased and protected investment in education. The government should progressively increase domestic financing while safeguarding education budgets during periods of fiscal constraint. Additional financing should be mobilized through public-private partnerships, community contributions, innovative financing mechanisms, and strategic collaboration with development partners. Greater investment should be directed toward resilient infrastructure, teacher development, inclusive education, digital learning, emergency preparedness,

and school improvement programs. Reducing dependence on donor funding by strengthening domestic financing mechanisms will improve the long-term sustainability of Zambia's education system.

08 Mainstream climate resilience and future preparedness: Given the increasing frequency and severity of climate-related hazards, climate resilience should become a central pillar of education sector planning. Disaster risk reduction, climate adaptation, and environmental sustainability should be integrated into school infrastructure development, curriculum implementation, teacher professional development, and education sector planning. The education sector should adopt a forward-looking approach that uses early warning systems, data-driven planning, and scenario-based preparedness to anticipate emerging risks before they disrupt learning.

09 Strengthen gender equity and inclusive education: The implementation of inclusive education policies should be strengthened through increased investment in accessible infrastructure, specialized personnel, assistive technologies, and inclusive teaching and learning resources. Teacher education programmes should integrate disability awareness and inclusive pedagogical practices as compulsory components of teacher preparation. At the same time, communities should be engaged through awareness campaigns that reduce stigma and promote positive attitudes towards disability and inclusion. The implementation of Zambia's re-entry policy should also be strengthened by providing adolescent mothers with continuous academic, psychosocial, and social protection support. Multi-sectoral interventions should address the underlying drivers of early marriage, teenage pregnancy, gender-based violence, and poverty through community engagement, comprehensive sexuality education, and strengthened child protection systems.

Ultimately, strengthening education system resilience requires recognizing that resilience extends beyond emergency response. It demands continuous investment in governance, financing, infrastructure, teachers, inclusion, partnerships, leadership, and evidence-informed decision-making. By embedding resilience across all aspects of education planning and service delivery, Zambia will be better positioned to anticipate future disruptions, minimize learning losses, protect vulnerable learners, and ensure the continuity of equitable, inclusive, and quality education under increasingly uncertain conditions. Such a whole-system approach will not only strengthen the education sector but also contribute to broader national resilience and sustainable development.

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