

# EDUCATION SYSTEM RESILIENCE IN AFRICA

## A Desk Review Report

March 2026





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## ACRONYMS

<b>ABE</b>	Accelerated Basic Education
<b>ALP</b>	Accelerated Learning Program
<b>ARESRO</b>	Africa Regional Education System Resilience Observatory
<b>CAR</b>	Central African Republic
<b>CSO</b>	Civil Society Organizations
<b>COVID-19</b>	Coronavirus Disease of 2019
<b>DRC</b>	Democratic Republic of Congo
<b>DRR</b>	Disaster Risk Reduction
<b>DRRM</b>	Disaster Risk Reduction and Management
<b>ECE</b>	Early Childhood Education
<b>ESR</b>	Education System Resilience
<b>ECOWAS</b>	Economic Community of West African States
<b>EiE</b>	Education in Emergencies
<b>EMIS</b>	Education Management Information System
<b>ERP</b>	Education Response Plan
<b>ESD</b>	Education for Sustainable Development
<b>ESP</b>	Education Sector Plans
<b>ESR</b>	Education System Resilience
<b>GEC</b>	Girls Education Challenge
<b>GPE</b>	Global Partnership for Education
<b>HRP</b>	Humanitarian Response Plans
<b>ICT</b>	Information and Communication Technology
<b>IDP</b>	Internally Displaced Persons
<b>IDRC</b>	International Development Research Centre
<b>IGAD</b>	Intergovernmental Authority on Development
<b>KIX</b>	Knowledge and Innovation Exchange
<b>LEAP</b>	Livelihood Empowerment Against Poverty
<b>NGO</b>	Non-Governmental Organizations
<b>RAN</b>	ResilientAfrica Network
<b>UNDP</b>	United Nations Development Programme
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>UNICEF</b>	United Nations Children's Fund
<b>WASH</b>	Water, Sanitation, and Hygiene

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## EXECUTIVE SUMMARY

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### Introduction

Education systems across Global Partnership for Education (GPE) partner countries in sub-Saharan Africa are increasingly operating in contexts characterized by recurring disruption. It is no longer a question of whether a shock will occur, but when the next one will hit. From climate-related cyclones, floods and droughts that destroy school infrastructure, to conflicts that deliberately target education, and public health crises that force prolonged school closures, these pressures are persistent.

This constant strain does not just interrupt schooling; it erodes the very foundations of education systems and reverses gains in access and quality in affected countries. This report, synthesizing evidence from GPE partner countries in sub-Saharan Africa, highlights how countries contextually understand education system resilience, the disruptions affecting education systems and associated vulnerabilities, as well as the practices deployed across partner countries to address these constraints.

### Methodology

This study employed a desk review methodology to synthesize existing evidence on how education system resilience (ESR) is understood and practiced. The review focused on analysing information from education policy documents, particularly Education Strategic Plans (ESPs) and a wide range of academic and grey literature. During the literature search, we used terms reflecting the contextual and diverse nature of ESR (e.g., education in emergencies, resilience, disaster management) to ensure comprehensive coverage. GPE partner countries were clustered into eight African sub-regions to enable contextualized and comparative analysis.

The analytical framework was guided by the GPE KIX ESR framework, applying a thematic narrative synthesis approach to examine key dimensions, including conceptual framings of ESR, stakeholder roles, system disruptions, and resilience practices across pre-primary, primary, secondary education and teacher training. Cross-regional thematic comparison and triangulation of policy, academic, and grey literature sources were used to enhance analytical rigor, reliability, and validity.

### Results

#### *Understanding of ESR*

While there is no global consensus on the meaning of ESR, across GPE partner countries in sub-Saharan Africa, ESR is understood in diverse ways, shaped by national contexts, risks, histories, and stakeholder priorities. The desk review revealed a shared understanding that ESR is not just a technical capacity but a system-wide, ecosystem function involving policy, institutions, communities, pedagogy, infrastructure, and other attributes working together to ensure learning continuity

during disruptions. Although the term “ESR” is often not explicitly used in national education plans (except for a few countries that have experienced more recent development, particularly in the post-COVID-19 period), the concept is implicitly embedded through strategies focused on disaster risk reduction (DRR), crisis response, risk management, and long-term system strengthening. The countries conceptualize ESR across four interconnected lenses:

- 1. ESR as Crisis Preparedness and Risk Management:** ESR in many countries is mainly understood as crisis preparedness and risk management. For example, countries view and frame ESR through disaster preparedness and emergency planning, safe and resilient school infrastructure, DRR- and peace-integrated curricula, institutional structures for crisis response, teacher training and psychosocial support, and data-driven and decentralized crisis management systems. These approaches aim to ensure continuity of education during crises through prevention, preparedness, and recovery mechanisms.
- 2. ESR as Continuity of Learning through Adaptive and Blended Delivery:** ESR is also understood as the ability of the system to maintain learning during disruptions through flexibility, technology integration, teacher readiness, and diversified learning channels. These alternative and technology-enabled methods include distance education through digital learning platforms, radio, and print-based learning; blended and hybrid models; and teacher capacity development and support.
- 3. ESR as Community-Anchored Stability in Fragile and Conflict Settings:** Countries affected by chronic conflict – like Somalia, South Sudan, and Ethiopia – view ESR as the ability of communities to sustain education when national systems are weak or absent. This includes community-led schools, local leadership and coordination, and informal education provision, among others. Education resilience becomes rooted in local agency, community structures, and social capital, enabling learning to continue despite insecurity, displacement, and institutional collapse.
- 4. ESR as Stakeholder Roles and Priorities:** ESR is viewed through the priorities and roles that stakeholders play thereby enabling education systems to withstand disruptions and maintain learning continuity. Development partners focus on partnerships, financing, technical assistance, and aligning support with global education frameworks and agendas to ensure system transformation, continuity, and sustainability, often including vulnerable populations. On the other hand, national policymakers emphasize sustaining teaching and learning during crises, aligning resilience efforts with national priorities such as DRR, peacebuilding, and safe learning spaces.

## Disruptions to the Education System

Analysis of the education strategic plans and academic literature revealed that some countries (and sub-regions) are faced with a polycrisis of climate-related disasters, public health emergencies, poverty and political conflicts.

**Climate-related shocks and stressors:** Analysis of the education strategic plans and academic literature revealed that some countries (and sub-regions) are faced with a polycrisis of climate-related disasters and/or conflict which intensify existing inequalities and undermine resilience. Recurrent shocks—such as droughts, floods, and cyclones—damage schools, displace communities, and interrupt learning.

- **Horn of Africa:** Countries like Somalia, Ethiopia, Eritrea, and Djibouti face droughts and erratic rainfall, causing school closures, food insecurity, displacement, and psychosocial stress, particularly among rural and pastoral communities.
- **West and Central Africa:** Floods and extreme weather destroy schools or convert them into shelters. Malnutrition and food insecurity in countries like São Tomé and Príncipe and Guinea-Bissau reduce cognitive development, increase absenteeism, and raise dropout rates, disproportionately affecting poor children reliant on school meals.
- **Southern Africa:** Droughts, floods, and cyclones disrupt schooling and livelihoods in Angola, Zambia, Zimbabwe, Mozambique, Malawi, and Madagascar. Disasters like Cyclone Idai destroyed thousands of classrooms, left hundreds of thousands without education, and pushed children into labor due to lost household income.
- **Sahel and dryland regions:** Chronic drought and desertification in countries like Mauritania, Niger, Burkina Faso, Mali, Cameroon, and South Sudan cause recurring food crises and malnutrition, reducing enrollment, retention, and completion.

**Public health crises:** Emergencies such as COVID-19, Ebola, and HIV/AIDS have caused widespread disruptions across education systems in GPE Africa partner countries, affecting learning outcomes, student wellbeing, and teacher retention. Vulnerable populations, including orphaned and marginalized children, face heightened challenges due to trauma, stigma, and limited resources. These crises have exposed gaps in disaster preparedness, digital infrastructure, and distance learning capacity, as seen in countries like Zimbabwe, Guinea, Malawi, and Lesotho.

Public health emergencies have prompted countries to rethink education planning. Strategic reforms now emphasize building resilient, shock-resistant systems, including emergency preparedness, digital learning solutions, psychosocial support, and measures to sustain learning continuity during crises. For example, post-COVID-19 evaluations, in Liberia, Cameroon, and Kenya, have informed policies to support vulnerable students, reduce teacher attrition, and strengthen systemic response to future public health shocks.

**Poverty:** Chronic poverty and socio-economic challenges severely undermine education access and quality in GPE Africa partner countries. Poverty creates direct financial barriers, leading to late enrolment, absenteeism, and dropouts, while also driving teenage pregnancies and child marriages. For example, in Zambia, 70.6% of children face overlapping deprivations, and in Angola and rural Guinea, poverty contributes to early marriages and school dropouts. On the supply side, underfunded education systems struggle with inadequate infrastructure, teacher shortages, and limited resources.

In Ghana, free senior high school policies overstretched infrastructure and staff, while in Malawi, only 21% of children from the poorest households access early childhood education. Senegal faces overcrowded classrooms, poor infrastructure, and a severe shortage of desks and classrooms, affecting the quality of learning. This combination of household poverty and under-resourced systems creates a vicious cycle, disproportionately affecting vulnerable populations and threatening the equity, quality, and sustainability of education.

**Political conflicts:** Armed conflicts and socio-political crises cause severe disruptions to education systems in GPE Africa partner countries, including the destruction of infrastructure, displacement of populations, and long-term systemic weaknesses. Large-scale displacements strain host communities' education systems, requiring curricular integration for refugees and recognition of credentials, as seen in Mauritania and South Sudan. Deliberate attacks on schools and education personnel create a climate of fear, leading to widespread closures and reduced teaching quality. In Burkina Faso, over 5,300 schools were closed in 2024, affecting more than 820,000 students and 24,000 teachers.

**Cameroon faces dual crises:** Boko Haram in the Far North and the Anglophone conflict in the Northwest and Southwest regions, resulting in school destruction, kidnappings, and internal displacement affecting over 1.2 million children. Nigeria's northern regions experience conflict-induced absenteeism due to Boko Haram targeting schools, while Mozambique's Cabo Delgado conflict has displaced over 800,000 people, nearly half of them children. In Somalia, chronic instability has fragmented the education system, with non-state actors providing most services. Similarly, the Democratic Republic of Congo, Sudan, Ethiopia, and Madagascar experience repeated disruptions from prolonged conflict, violence, and political instability.

**Other disruptors:** These include shortage and uneven distribution of teachers; weak inter-ministerial coordination; violence, drugs, and substance abuse; overcrowding; early marriage and teenage pregnancies; and disability and other marginalization.

## *Practices Related to Education System Resilience*

Most practices relate to strengthening education systems, often drawing lessons from crises like COVID-19 and the Ebola epidemic for countries that have recently developed new education strategic plans. The practices include:

- 1. ICT Infrastructure:** Countries are investing in digital learning and distance education tools to ensure continuity of education and learning in the event of a disruption. For example, Ethiopia, Ghana, Kenya, and Rwanda expanded online and remote learning platforms to reach learners in remote areas during the COVID-19 pandemic.
- 2. Curriculum Design:** Country-specific ESPs call for the integration of disaster risk reduction, climate change, peace education, and health issues (e.g., HIV/AIDS in Lesotho) into their curricula. Conflict-affected countries like Ethiopia, Kenya, and Somalia implement accelerated learning programs to support displaced and out-of-school children. Countries are also reforming curricula to include 21st-century skills and social-emotional learning.
- 3. Teacher Training:** Professional development for teachers includes disaster preparedness, climate change, conflict-sensitive pedagogy, psychosocial support, and digital teaching skills. Countries like Zimbabwe, South Sudan, and Madagascar are formalizing teacher qualifications and improving working conditions.
- 4. School Environment and Infrastructure:** ESPs prioritize safe, climate-resilient, and child-friendly schools, including temporary learning spaces and WASH facilities. Countries affected by conflict and disasters, including South Sudan, Cameroon, and Madagascar, pay more attention to gender-sensitive, safe learning environments and social-emotional learning.
- 5. Planning:** Countries are developing contingency and humanitarian response plans at national, district, and school levels to prevent and mitigate current and possible future disruptions. Measures that are prompted at the different education levels include disaster drills, evacuation plans, alternative instruction methods, and environmental safety assessments. Integration of refugees into national education systems is also prioritized by some countries like Uganda, Ethiopia, and Mauritania.

## *Gender, Equity, and Social Inclusion*

Gender inequities remain a major challenge in many GPE Africa partner countries and significantly affect the resilience of education systems. Building resilient education systems requires inclusive and equitable access to education so that all learners can continue learning during crises and recover effectively. Key issues influencing gender equity and social inclusion include barriers to girls' education, conflict and displacement, poverty and economic inequality, and the exclusion of marginalized groups.

**Education of the girl child:** Girls face numerous barriers to education due to cultural, socio-economic, and institutional factors. Harmful practices such as child marriage and female genital mutilation, heavy domestic responsibilities, long travel distances to school, inadequate infrastructure, and school-related gender-based violence contribute to absenteeism and high dropout rates.

To address these inequities, some countries have introduced supportive initiatives, such as community programs in Malawi and re-entry policies for pregnant girls in Sierra Leone. Sierra Leone's National Policy on Radical Inclusion aims to address systemic barriers by promoting gender-sensitive education, improving school infrastructure, and supporting marginalized girls.

**Conflict and displacement:** Armed conflict disrupts education by destroying infrastructure, displacing families, and exposing children—especially girls—to risks such as gender-based violence and forced marriages. The ESPs for countries like Cameroon, Togo and South Sudan have prioritized support for refugees and internally displaced learners, while regional and international frameworks such as the Safe Schools Declaration and the Continental Education Strategy for Africa promote the protection of education during crises.

**Poverty and economic inequalities:** Poverty is a major determinant of school attendance, particularly among girls and vulnerable groups. Economic pressures often force boys into work and increase the likelihood of early marriage for girls. Some countries have implemented social protection policies to mitigate these effects. For example, Ghana's Livelihood Empowerment Against Poverty (LEAP) program provides cash transfers to poor households to support children's school attendance, while Sierra Leone's Radical Inclusion Policy prioritizes education access for disadvantaged learners.

**Marginalized groups:** Ensuring equitable access for marginalized learners, including children with disabilities and those affected by poverty or gender-based violence, strengthens the resilience of education systems. Countries like Zimbabwe have special programs such as psychosocial services, special needs education, and learner welfare initiatives aimed at supporting vulnerable learners and ensuring continued participation in education.

## Conclusion

While there is no globally accepted definition of Education System Resilience (ESR), findings reveal that the conceptualization of ESR varies by national context. ESR encompasses crisis preparedness, continuity of learning through adaptive and blended methods, community-led education in fragile settings, and stakeholder-driven priorities that integrate national and global agendas.

Countries operationalize ESR through investments in digital learning infrastructure, curriculum reforms addressing disaster risk reduction, climate change, and social-emotional skills, teacher training, safe and resilient school environments, and contingency planning. Lessons from crises such as COVID-19 and Ebola are accelerating these efforts on the continent. GPE Africa partner countries are also emphasizing gender equity and social inclusion in their education strategic plans, recognizing them as key to building resilient education systems.

Policies address barriers such as early marriage, poverty, conflict, and gender-based violence that disproportionately affect girls and marginalized learners. To ensure no learner is left behind during crises, countries prioritize targeted, inclusive policies, programs, and collaborative efforts, particularly supporting girls and children with disabilities. Therefore, the desk review findings provide a benchmark for further exploration of the meanings and practices of ESR through qualitative interviews.



## 1. INTRODUCTION

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Globally, education systems are faced with several disruptions that include climate-related disasters, conflicts, health crises, and technological challenges [1]. These factors significantly impact education access and quality, school infrastructure, and learning outcomes. Climate-related disasters such as floods, droughts, and extreme weather events frequently displace communities and damage schools, disrupting education continuity. Nearly half of the world's children live in countries highly vulnerable to climate shocks, many of which are Global Partnership for Education (GPE) partner countries in sub-Saharan Africa. These disasters often lead to prolonged school closures and damage to learning materials and infrastructure, disproportionately affecting girls and other marginalized groups [2].

Similarly, conflicts and political instability in several partner countries cause school closures, displacement of children, and increased vulnerability of learners. More than a third of GPE partner countries are affected by fragility and conflict, with millions of children out of school due to violence and insecurity [3,4]. Education in emergency contexts is crucial for protection and social stability [4]. The COVID-19 pandemic exposed how fragile education systems are.

The pandemic further exacerbated learning disruptions by forcing prolonged school closures and limiting access to essential health and nutrition services in schools. During the pandemic, GPE partner countries in sub-Saharan Africa implemented distance learning, accelerated learning, and catch-up programs to mitigate short-term impacts, though long-term effects on education systems remain a concern [5]. Technological challenges such as limited internet connectivity, lack of digital resources, and infrastructural deficits hinder the adoption of remote learning solutions, widening educational inequalities. Partnerships with the private sector are vital to bringing technical expertise and tools to improve learning quality at scale in these countries [6,7].

Resilience is widely understood as the adaptive capacity to respond to threats while ensuring continuity of essential functions [8]. Education System Resilience (ESR), in turn, refers to the system's ability to anticipate, withstand, adapt to, and recover from shocks such as pandemics, conflicts, natural disasters, or economic crises, while safeguarding inclusive, equitable, and quality learning for all learners [9]. Resilience is not only about survival but also about enabling systems to thrive despite adverse conditions [10].

This involves deploying adaptive strategies that prevent interruption of learning activities, addressing both current and emerging risks, and strengthening long-term system stability. In the education sector, resilience means ensuring that learning continues despite crises, that systems can recover quickly, and that they evolve to better withstand future challenges [11]. This is vital to protect the right to education and to prevent setbacks in learning outcomes, especially for vulnerable populations.

As existing research demonstrated, resilience operates at multiple levels:

At the individual level, resilience refers to learners, teachers, and families developing coping skills, emotional strength, and adaptive capacities to navigate disruptions such as school closures, displacement, or trauma;

At the institutional or system level, resilience involves education ministries, schools, and communities implementing policies, infrastructure, and practices that anticipate risks, maintain service delivery during crises, and innovate to improve education quality and equity.

Building resilience at both levels is essential to create education systems that not only survive shocks but also emerge stronger, more inclusive, and better prepared for future uncertainties [3,8]. This requires a multifaceted approach that includes strengthening governance, investing in infrastructure, and adopting innovative technologies tailored to local contexts [12]. Governments and partners are encouraged to prioritize pre-primary education, support vulnerable student populations, and integrate context-appropriate education technologies to enhance learning outcomes and system adaptability.

Moreover, resilience involves not only the ability to recover from shocks but also to transform and improve education systems to better withstand future challenges. This includes fostering community engagement, enhancing teacher training, and ensuring equitable resource allocation across regions [13].

Africa faces multiple development challenges, including climate change, pandemics, conflicts, and displacement, which have severely impacted community livelihoods and education systems, particularly in Sub-Saharan Africa [14,15]. The COVID-19 pandemic exposed vulnerabilities in education, causing school closures, income losses for private schools, and shifts to online learning, while climate-related shocks like floods and droughts continue to disrupt education infrastructure and attendance [16]. Despite these threats, there is limited evidence of how Education System Resilience (ESR) is understood and practiced in Africa, especially among vulnerable populations [1,17].

Using a desk review methodology, this report addresses this knowledge gap by examining the following questions:

1. How is ESR understood in academic and grey literature relevant to GPE partner countries in sub-Saharan Africa?
2. What disruptors affect the education systems of GPE partner countries in Africa?
3. How is ESR practiced within the context of GPE partner countries in sub-Saharan Africa?
4. Whether and how existing practices related to ESR consider issues of gender equality and social inclusion?

This report is developed by the Africa Regional Education Systems Resilience Observatory (ARESRO), which is part of the Global Partnership for Education (GPE) Knowledge and Innovation Exchange (KIX) Observatory on Education System Resilience initiative and is implemented by a consortium led by Makerere University.

## 2. METHODOLOGY

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The literature search employed a systematic approach using desk review methodologies to ensure comprehensive coverage of relevant sources. The desk review was grounded in two primary sources of evidence:

- **Grey literature:** government policy documents (official strategies, frameworks, and guidelines shaping practice) and publications from international and non-governmental organizations to incorporate practical insights and policy perspectives. National and regional policies, legal frameworks, and regulatory guidelines from the target African countries were also examined to contextualize findings within existing governance structures.
- **Academic literature:** Peer-reviewed journal articles, books, book chapters, and conference papers, to capture scholarly perspectives on education system resilience and related challenges.

It is important to recognize that ESR is documented differently in various literature across the GPE partner countries. The customized search terms/phrases that were identified and used during the literature search as synonymous with education system resilience include:

- "Education System and Resilience."
- "Education" AND "disaster management."
- "Education system AND vulnerability AND risks."
- "Resilience of education systems."
- "Educational resilience."
- "Education in Emergencies" (EiE)
- "Resilience of Education Systems."
- "CSR" (the acronym for Résilience des Systèmes Éducatifs)
- "Education in crisis."

By comparing findings across GPE partner countries clustered across the eight sub-regions (Table 1), this report highlights how education system resilience was shaped by local contexts.

*Table 1: GPE Africa partner countries clustered by sub-region.*

Sub-region	Countries
Southern Africa-1	Zambia, Angola, Eswatini, Lesotho, Zimbabwe
Southern Africa-2	Malawi, Comoros, Madagascar, Mozambique
East Africa	Uganda, Kenya, Rwanda, Burundi, Tanzania, South Sudan
Western Africa Francophone-1	Senegal, Guinea-Bissau, Guinea-Conakry, Ivory Coast, Mauritania
Western Africa Francophone-2	Mali, Burkina Faso, Niger, Benin, Togo
West Africa Anglophone	Ghana, Gambia, Liberia, Nigeria, Sierra Leone
Horn of Africa	Ethiopia, Djibouti, Eritrea, Somalia
Central Africa	Cameroon, Democratic Republic of the Congo, Chad, Central African Republic, Republic of the Congo, Sudan, São Tomé and Príncipe.

## Analysis

The analysis was guided by the GPE KIX framework on education system resilience [1]. A thematic analysis was conducted to identify recurring patterns and insights across the selected body of literature. This analysis employed a narrative synthesis approach, which enabled a nuanced and comparative examination of several core dimensions related to ESR. These dimensions included the definition and conceptual framing of ESR, the roles and responsibilities of key stakeholders, disruptions affecting the education system, and practices of ESR. The analysis focused on pre-primary, primary and secondary education as well as teacher training.

Thematic comparisons were systematically carried out across eight sub-regions, allowing for the identification of both divergences and commonalities in how ESR is understood and operationalized. This cross-regional analysis provided valuable insights into context-specific challenges and adaptive strategies, highlighting areas of innovation as well as persistent gaps. To ensure the reliability and validity of the thematic findings, a triangulation method was applied. This involved integrating insights from diverse sources, including policy documents, academic literature, and other grey literature. By drawing from multiple types of evidence across the eight sub-regions, the analysis achieved a more holistic and credible understanding of the policies and practices related to education system resilience in varied contexts.



*School boys discussing during a class groupwork session.*

## 3. RESULTS



### 3.1 How is Education System Resilience Understood Within Different Contexts?

The desk review revealed that GPE partner countries in sub-Saharan Africa understand ESR differently, depending on country-level priorities, history, and the prevailing resilience challenges they face. Countries generally frame ESR not only as a technical capacity, but increasingly as an ecosystem function requiring policy, pedagogical, and institutional preparedness to operate in tandem during crises. They tend to view ESR as the shared ability of institutions, communities, and education systems to carry on with learning even when faced with a disruption.

While the term 'education system resilience' is not explicitly mentioned in most of the education strategic plans for the GPE partner countries, the underlying concept of ESR is implied implicitly therein by focusing on disaster risk reduction (DRR), risk mitigation and management, crisis response, and long-term education system strengthening to guard against possible future disruptions. While the intensity and sources of disruption differ, the underlying idea from the synthesis of grey and academic literature on ESR reveals that system resilience is perceived as the proactive capacity to anticipate, absorb, adapt, and transform while ensuring access to quality education for all, especially the most vulnerable learners.

This analysis shows that countries broadly conceptualize Education System Resilience on a spectrum presented in four distinct lenses below:

1. viewing ESR as crisis preparedness and risk management;
2. as a technical challenge to maintain learning through adaptive and blended delivery;
3. as a matter of community-led survival in fragile or conflict-affected settings; and
4. through the lens of specific stakeholder roles and priorities.

These four spectra, as detailed below, are not mutually exclusive and reflect the priorities and the contextual operational realities.

#### 3.1.1 Education System Resilience Understood as Crisis Preparedness and Risk Management

Generally, a combination of education policy documents and academic literature from the GPE partner countries views ESR through the lens of disaster preparedness, institutional readiness, and risk reduction. This conceptualization is prominent in countries that face significant natural disasters, health emergencies, or are proactively building institutional capacity to anticipate shocks. Within these contexts, resilience is framed through formal disaster risk reduction frameworks, emergency planning, and infrastructural development.

For instance, in Madagascar, which faces recurrent cyclones, floods, and health emergencies, making preparedness a permanent policy concern, the country views ESR as the system's ability to maintain learning during shocks through safe infrastructure, Disaster Risk Reduction (DRR)-integrated curricula, and structured emergency planning [18]. The Ministry of National Education strengthened this definition by establishing a dedicated disaster risk management service to institutionalize resilience within sector planning [19].

In addition, Madagascar's policy documents demonstrate a national, proactive strategy by integrating DRR into the school curriculum and establishing a dedicated disaster risk management service within the Ministry of Education, following lessons from the impact of cyclones [18]. Similarly, Malawi's approach is anchored in disaster risk management, articulating resilience through the adoption of Safer Schools Construction Guidelines and coordinated disaster-risk reduction, with a focus on both physical infrastructure and the psychosocial resilience of human resources [20].

Cameroon provides a clear example of conceptualising ESR as a crisis preparedness and risk management through a dedicated programme (Programme 15) within its education strategic plan. Programme 15 defines ESR through the dimensions of prevention, preparedness, and crisis mitigation, aiming to ensure quality learning in safe environments during health, climate, or security emergencies [21].

Kenya conceptualizes ESR primarily through the lens of emergency management and adaptive capacity, shaped by experiences from COVID-19 and climate change, and has an emphasis on training of education practitioners on DRR and Resilience [22]. Liberia explicitly describes resilience as the ability to prepare for, respond to, and recover from crises like epidemics and climate events, emphasizing gender responsive DRR and early warning systems [23].

In Sierra Leone, ESR is conceptualized through structured reforms that enable the system to remain functional during shocks. Having navigated Ebola, COVID-19, and recurring climatic hazards, the country underscores resilience as a blend of restoration capacity, adaptability, and transformative policy change. This includes decentralizing decision-making, investing in teacher professional development, and using real-time data for crisis response [24].

In contrast, regional analysis of education sector plans of francophone countries revealed that despite severe security crises in Sahel nations like Burkina Faso, Mali, Niger, and Chad, the crucial themes of resilience and Education in Emergencies (EiE) are largely absent from most education sector plans, indicating a disconnect between risk profiles and formal preparedness planning.

It is important to note that ESR in African countries is primarily conceptualized through disaster preparedness, institutional readiness, and risk reduction, with varied national approaches emphasizing safe infrastructure, crisis management, adaptive capacity, and policy reforms to maintain education continuity during shocks such as natural disasters, pandemics, and security crises.

### **3.1.2 Education System Resilience as Continuity of Learning Through Adaptive and Blended Delivery**

Education system resilience is also framed around the capacity of the system to sustain learning through alternative or technology-enabled modalities during disruptions. This viewpoint acknowledges that crises often interrupt physical schooling, and therefore continuity ought to consider diversified learning channels. Pedagogical and operational flexibility of education systems should be a prerequisite to maintain learning during disruptions, often leveraging technology and alternative approaches.

For instance, Mauritania's ESP frames resilience building as the development of adaptive pedagogical methodologies such as distance learning and digital technologies [25]. In Madagascar, the country deploys radio lessons, printed materials, and investments in digital platforms to bridge access gaps [26]. These tools help sustain learning during cyclones and other disruptions.

In Nigeria, ESR is closely associated with digital competence, blended learning, and teacher adaptation. Stakeholders there define resilience as the system's ability to deliver learning through both online and face-to-face modes while ensuring that teachers have the capacity to support learners through rapid transitions [27]. Beyond distance learning, Nigeria's ESP prioritizes a strategy to focus on building the confidence of teachers and their ability to handle children who suffer from traumatic experiences of violence and war [28].

In The Gambia, the same idea is reflected in efforts to improve digital readiness and rehabilitate learning infrastructure after adverse climatic events. Digital tools, where available, are increasingly part of national strategies for learning continuity. Sierra Leone also sees adaptive delivery as central to resilience. The country's investments in distance learning during Ebola laid a foundation that was later strengthened during COVID-19. Teacher professional development further supports pedagogical flexibility [29]. Therefore, resilient systems need to provide diverse learning modalities, including expanding digital and remote learning alongside low-tech alternatives to bridge the digital divide and ensure inclusivity [30].

### **3.1.3 Education System Resilience as Community-Anchored Stability in Conflict-Affected Settings**

In countries marked by conflict, displacement, and weak state structures, especially Somalia, Liberia, Chad, the Central African Republic, DRC, Ethiopia, Eritrea, Mali, Burkina Faso, and South Sudan, ESR is primarily understood as the capacity of communities and local actors to sustain education when national systems crumble. Education in the context of countries affected by conflict on a wide scale is often left to the communities to run or implement since the state is either not present or not in control of much of the country.

Thus, the community steps in to fill this void, and the education often championed by and from the communities is often informal in nature, due to the absence of teachers, teaching and learning materials, as well as oversight for the education

system.

In Somalia, considering many decades of conflict and limited presence of the federal government in social services and in states, education system resilience is basically understood as the ability of communities to provide, manage, and protect schooling services independently [31]. Most schools in Somalia are privately run or community-owned, and Community Education Committees (CECs) play pivotal roles in managing schools, coordinating responses during emergencies, and ensuring basic continuity of services when the state is unable to do so [32,33].

South Sudan articulates resilience as the capacity to maintain educational continuity amidst persistent conflict and climate shocks, with operational measures like community-focused contingency planning and aligning the school calendar with seasonal realities to adapt to environmental constraints [34]. On the other hand, Côte d'Ivoire conceptualizes ESR within a post-conflict recovery context, relying on community and institutional mechanisms like peace messenger clubs and civic education modules to absorb shocks and maintain continuity [35,36].

In Liberia, resilience is framed as a combination of post-crisis recovery, adaptation, and system reform. Having experienced a guerrilla war, Ebola, and repeated infrastructural shocks, ESR is viewed through community participation, teacher improvisation, local leadership, and external partnerships that help build capacity and restore educational services [37]. In South Sudan, ESR is defined as the ability to sustain core system functions such as teacher deployment, school management, and basic service provision, despite chronic conflict, severe displacement, and limited state funding. This version of resilience emphasizes survival and minimal continuity rather than reform [38].

### **3.1.4 Education System Resilience as Roles and Priorities of Stakeholders**

This analysis revealed that ESR is perceived as a mechanism aimed at enabling education systems to withstand the factors that threaten them and to continue functioning as in the past, and these perspectives on ESR vary by stakeholder group [9,39]. International development agencies focus on partnerships, financing, and technical assistance, as well as alignment of external support with global frameworks to teaching and learning to drive system transformation, continuity of learning, use of alternative learning modalities, and sustainability despite any form of disruption.

For instance, multi-lateral agencies or actors in Liberia emphasize ESR as collaborative efforts, partnerships between donors, non-governmental organizations, and government to strengthen the education system [40]. Some development partners include vulnerable populations in their framing of ESR. For instance, UNICEF defines ESR as the ability of the education system to anticipate, prevent, withstand, adapt, and recover from disruptors, while advancing the rights of every child, with special attention to the most vulnerable and disadvantaged children [41].

Policymakers at the national level focus more on actions that sustain teaching and learning during crises and how these resilience efforts are aligned with the broader national development priorities. For instance, in Rwanda, ESR is shaped by the country's history, where efforts align with the post-genocide reconstruction agenda, which is closely tied to peacebuilding, social cohesion, and the prevention of future conflict [42,43]. It is not just about maintaining education services, but ESR is intrinsically linked to healing and unification of the country to prevent a recurrence of any form of genocide. In contrast, the Mozambique Ministry of Education and Human Development (MINEDH) conceptualises ESR through a DRR model (preparedness, response to crises, and ensuring continuity of learning), integrating infrastructure durability, teacher preparedness, and community engagement [44]. The Government of Ethiopia prioritizes continuation of education in emergencies by developing a preparedness strategy and plan, equipping schools in emergency-prone areas with training and equipment to enable education and creating safe and child-friendly learning spaces [45]. In the Central African Republic, stakeholders view the resilience of the education system as a set of reforms aimed at rebuilding the education system, after several decades of conflict, which caused the disruption of the exercise of the right to education for all Central Africans and refugees living in the country [46].

Local stakeholders, such as communities and Civil Society Organizations (CSOs), define ESR through practical, community-based actions and partnerships that address immediate challenges and safeguard education at the local level. They view ESR in terms of practical, on-the-ground action, sustainability, and availability of resources for supporting continuity of learning, as well as continuous community engagement while maintaining a given degree of autonomy [47]. Others such as teachers, parents, community leaders, etc. are strategically positioned at the frontline of the education system, and are therefore well placed to effectively identify, interface, and respond to disruptions affecting schools and their surrounding communities. For example, literature shows that teachers in Kenya view ESR as the ability to adapt to new teaching methodologies, especially in response to the changing learning environments and curriculum demands [48], while in Senegal, it is described as the ability of teachers, trainers and educational advisors to adjust their practices, to share knowledge and to preserve learner engagement despite constraints [39].

In addition, learners and teachers generally view ESR as the capacity for perseverance, resourcefulness, and psychological strength to continue learning or teaching despite adversities. For example, in Zimbabwe, ESR is inherently associated with learners' wellbeing and its subsequent influence on their academic performance amid environmental shocks [49]. Others view ESR as a dynamic process of personal adaptation and the ability to function in unstable environments [50]. By way of adaptation, individuals use coping strategies to overcome psychosocial, economic, and cultural barriers to learning. These layered perspectives highlight ESR as both a systemic and community-driven process. ESR for teachers in the context of countries affected by conflict, like Mali, is seen as the ability of educators to continue fulfilling their roles despite direct threats and disruptions [51]. This focuses on the personal and professional resilience of individuals within the system.

From the learners' perspective, ESR also refers to the set of personal strategies implemented by students (with or without the support of their teachers) to overcome psychosocial, economic, or cultural obstacles and continue their education [52,53]. It is from this point of view that learners and informal groups perceive it as a set of dynamics of mutual aid, self-organization, and academic "survival" [54]. Ultimately, the purpose of ESR is to ensure continuous learning opportunities, particularly for marginalized populations such as girls, children with disabilities, and learners in remote or disadvantaged settings. By building adaptive capacity across multiple levels, education systems can better anticipate risks, withstand shocks, and recover in ways that minimize disruption and promote equitable access to quality education.

Overall, there is no unified understanding of ESR across the GPE partner countries in sub-Saharan Africa, as education systems in these countries are faced with unique challenges and contexts. However, most countries conceptualise ESR in terms of crisis preparedness and risk management, focusing on institutional readiness and maintaining education continuity through safe infrastructure and emergency planning. Others prioritize adaptive and blended learning approaches to sustain education during disruptions like pandemics. In fragile or conflict-affected settings, resilience often depends on community-led efforts to keep education going when formal systems are weakened by the crises. Additionally, conceptualisation of ESR varies by nature of stakeholders. For example, international agencies, policymakers, communities, teachers, and learners view resilience based on roles and priorities, thus influencing their actions towards disruptions.



### 3.2 Synthesis of Contextual Disruptions to Education Systems

The resilience of education systems across Africa is shaped by the interplay of acute shocks and chronic stressors. Shocks (such as violent conflict, floods, pandemics, or economic crises) cause abrupt and often devastating disruptions to learning continuity, infrastructure, and human resources. Stressors, by contrast, are enduring pressures such as drought, persistent poverty, underfunding, high teacher attrition, and weak governance that progressively erode system stability. Both phenomena disproportionately affect vulnerable groups, including girls, children with disabilities, learners in rural and conflict-affected areas, and households trapped in poverty.

Literature highlights that while much research has focused on resilience at the level of students, teachers, and communities, less attention has been paid to systemic resilience, which is the capacity of education systems to anticipate, withstand, and adapt to crises. For instance, a study in Zimbabwe highlighted that student teachers (a less prioritised group, like in many countries) face several stressors including: 'fear of contracting contagious diseases like COVID-19 during outbreaks, isolation, stigmatization and death, anxiety, uncertainty, hopelessness, economic hardships, prolonged teaching practice period, school closures, transference of face-to-face teaching to online learning' [55].

Other common disruptors like weak governance systems for the education system, chronic underfunding, and reliance on external financing compound vulnerabilities, particularly in fragile and conflict-affected countries. Regional diversity is also evident: while countries in West Africa grapple with the historical legacies of curricular legitimacy, those in the Sahel and Horn of Africa face compounded pressures from protracted conflicts, climate shocks, and displacement. Health emergencies such as Ebola and COVID-19 have cut across all contexts, disrupting schooling, straining fragile systems, and amplifying inequities in access and outcomes.

There have also been more nuanced challenges affecting the continuity of learners in countries with very weak governance systems. For instance, in Eritrea, school drop outs for learners at grade 11 is very high because students want to escape from the compulsory military service imposed by the government, which further weakens the resilience of the education system [56]. Below, we summarise the different disruptions as well as the geographical prominence across the GPE partner countries in sub-Saharan Africa (see Table 2).

*Table 2: Summary of the disruptions that affect the resilience of education systems by sub-region.*

Sub-region	Countries	Disruptions
<b>Southern Africa-1</b>	Zambia, Angola, Eswatini, Lesotho, Zimbabwe	<ul style="list-style-type: none"> <li>• Climate-related disasters: (droughts, floods, cyclones and tropical storms, wildfires, heatwaves, earthquakes).</li> <li>• Socio-economic challenges (high unemployment rates, widespread poverty and income inequality, food insecurity and malnutrition, inadequate infrastructure impact of HIV/AIDS).</li> <li>• Political instability</li> </ul>
<b>Southern Africa-2</b>	Malawi, Comoros, Madagascar, and Mozambique	
<b>East Africa</b>	Uganda, Kenya, Rwanda, Burundi, Tanzania, and South Sudan	<ul style="list-style-type: none"> <li>• Conflict</li> <li>• Climate related disasters</li> <li>• Socio-economic challenges</li> <li>• Political instability and refugee influxes</li> <li>• Climate-related disruptions (droughts, floods: cyclones, heatwaves, food insecurity, water scarcity and landslides)</li> </ul>

Sub-region	Countries	Disruptions
<b>Western Africa Francophone-1</b>	Senegal, Guinea-Bissau, Guinea-Conakry, Ivory Coast, Mauritania	<ul style="list-style-type: none"> <li>• Economic fragility</li> <li>• Conflict</li> <li>• Environmental stressors</li> </ul>
<b>Western Africa Francophone-2</b>	Mali, Burkina Faso, Niger, Benin, and Togo	
<b>West Africa-Anglophone</b>	Gambia, Ghana, Liberia, Nigeria, and Sierra Leone	<ul style="list-style-type: none"> <li>• Governance</li> <li>• Infrastructure</li> <li>• Post-conflict recovery</li> </ul>
<b>Horn of Africa</b>	Djibouti, Eritrea, Ethiopia, and Somalia	<ul style="list-style-type: none"> <li>• Climate related disasters (droughts, floods)</li> <li>• Conflict</li> <li>• Prolonged droughts, and food insecurity</li> <li>• political instability</li> </ul>
<b>Central Africa</b>	Cameroon, the Democratic Republic of Congo (DRC), Chad, the Central African Republic (CAR), the Republic of Congo, Sudan, and Sao Tome and Principe	<ul style="list-style-type: none"> <li>• Armed conflict and displacement</li> <li>• Weak institutional capacity</li> </ul>

Analysis of the education strategic plans and academic literature revealed that some countries (and sub-regions) are predominantly faced with climate-related disasters or conflict or both. In many countries, there is an intersection of these disruptions, and this compounding exacerbates pre-existing vulnerabilities, disproportionately affecting marginalized groups, and creates a cyclic pattern where each crisis erodes the system's capacity to cope with the next.

### 3.2.1 Climate-Related Shocks and Stressors

Disruptions related to climate change affect several education systems of the GPE partner countries. While the degree of explicit strategic attention and recognition of disruptors to the education systems (from the synthesis of the country-specific education strategic plans) varies by country, the collective evidence indicates that climate change is a polycrisis exacerbating existing inequities and straining system resilience. Countries in the Horn of Africa are exceptionally vulnerable to climate change, with cyclical droughts and floods disrupting education by destroying infrastructure, displacing communities, and undermining livelihoods.

For example, Somalia, Eritrea, Ethiopia, and Djibouti frequently experience climate change patterns that cause extended droughts and unpredictable rainfall patterns, leading to destruction of school infrastructure, displacement of communities, food insecurity, school dropouts, and deaths, especially among rural and pastoralist communities. For pastoralist communities, who constitute a significant vulnerable

group, drought means children leave school in search of pasture and water for their herds.

In Ethiopia's diverse socio-geographic setting, these disasters not only threaten physical facilities but also negatively impact students' psychosocial well-being and learning continuity.

Further, the climate stress has recently been compounded by other hazards, such as the locust infestation that swept across the Horn of Africa, limiting agricultural livelihoods, and affecting the education cycle. In Mali, some of the effects of climate change-related events included: 167 schools were affected by flooding, 256 were damaged or destroyed, and another 128 are currently occupied by disaster victims [57]. This triple effect, damage, destruction, and repurposing as shelters, directly eliminates functional learning spaces. Similarly, in Chad, the UNDP (2023) reported that the 2022 rainy season displaced "more than one million people" and devastated "over 465,000 hectares of farmland," crippling agricultural communities and disrupting schooling.

Furthermore, food insecurity and severe malnutrition act as critical stressors to learners and their communities, which directly impede cognitive development and educational participation. This is starkly illustrated in São Tomé and Príncipe's education strategic plan, which highlights that a high rate of chronic malnutrition (with one in three children under five years suffering from moderate chronic malnutrition and one in eight suffering from severe chronic malnutrition) affects young children [58].

In addition, 77% of schools in Guinea-Bissau reported being affected by food insecurity, which resulted in cognitive impairments, absenteeism, and dropouts among others [59]. In Guinea-Bissau, the absence of school canteens has been directly correlated with a significant drop in learning outcomes and aggravates abandonment. These health challenges collectively degrade educational quality, equity, and impairment of the human capital potential of learners. The vulnerable groups most affected are children from the poorest households, for whom a school meal may be a primary incentive for attendance.

The southern Africa sub-region is very vulnerable to climate change, which acts as both a sudden shock and a slow-burning stressor, directly disrupting schooling and exacerbating underlying socio-economic vulnerabilities. The manifestations vary geographically, with countries like Angola, Zambia and Zimbabwe experiencing severe droughts, floods, and cyclones, while others grapple with recurrent floods. For instance, in the semi-arid southern region of Angola, a severe drought intensified the existing challenge of pastoral migration, leading to widespread school closures.

In the municipality of Curoca, one of the hardest hit areas, 13 schools closed due to student absence, and of Cunene's 887 primary schools, 614 were affected by the drought in some way, causing severe disruption to no less than 70 percent of the province's 214,000 students. It is important to note that Zambia was ranked the 41st position in climate vulnerability by the 2020 University of Notre Dame Global

Adaptation Initiative index, with climate impacts disproportionately affecting rural and underserved communities and exacerbating existing educational inequities [60]. Additionally, the entire archipelago in Comoros is highly susceptible to cyclones, floods, and even volcanic eruptions and earthquakes [61].

Similarly, Zimbabwe faces a "complex humanitarian crisis," with one of the worst droughts in 40 years affecting an estimated 50% of the population, including 3.5 million children [62]. The indirect effects are equally devastating; as in the Zambian context, flooding in the Zambezi River basin forces school closures not only due to inaccessible roads but also because of crop loss, which destroys the livelihoods families depend on to support their children's education. These climate shocks disproportionately affect rural, agriculture-dependent communities and children in low-lying flood-prone areas, pushing children into labour to support family income and increasing their vulnerability to dropout of school.

Mozambique, Madagascar, Malawi, and Comoros face recurrent cyclones, floods, and droughts that cause direct physical damage to school infrastructure and severely disrupt academic calendars. Mozambique is prone to intense cyclones due to its proximity to the Indian Ocean. In Mozambique's Education strategic plan, cyclones like Idai and Kenneth were recorded to have damaged numerous schools [63]. These events also force school closures, repurpose schools as emergency shelters (as seen in Malawi, where classrooms are converted into shelters for internally displaced persons), and cut off access for students in remote areas [20, 63].

There have been substantial effects of the cyclones, for instance, Cyclone Idai in 2019 affected 1.8 million people, destroying over 3,300 classrooms, and leaving approximately 263,000 children without access to education. More recently, in 2024, Tropical Storm Filipo and Cyclone Chido damaged 537 schools, demonstrating a relentless pattern of destruction [64]. Geographically, the northern and coastal regions bear the brunt of cyclones and floods, while central and southern areas are more susceptible to debilitating droughts [65]. These destructions are compounded using low-quality construction materials, which amplify infrastructural vulnerability.

Similarly, the eastern and northern coastal regions of Madagascar are perennially battered by cyclones, which are often accompanied by floods and landslides [18, 66]. In stark contrast, the southern region grapples with severe drought, which in 2021 left 500,000 children malnourished, creating a profound stressor that undermines cognitive development and school attendance [67]. The chronic nature of these disasters, combined with inadequate early warning systems, keeps the education system in a perpetual state of response and recovery.

Concurrently, chronic stressors such as droughts and progressive desertification, notably in the countries in the Sahelian region like Mauritania, Niger, Burkina Faso, Mali, and other countries like Cameroon and South Sudan, undermine the foundational conditions for education. A review of education strategic plans of these countries reveals that these chronic climate stressors subsequently contribute to recurring drought, food crises and persistent malnutrition which are linked to a reduction in enrolment, completion, and retention [25].

Relatedly, Cameroon's Education Strategic Plan recognizes that the country faces significant and increasingly frequent climate-related disruptions that directly impact educational infrastructure and access. The plan further documents that natural catastrophes resulting from climate change are becoming more frequent and intense, with particularly severe effects in the Far North and North regions. Floods constitute the most significant climate-related threat, affecting the Mayo-Danay, Mayo-Tsanaga, and Logone and Chari divisions, while droughts are a recurrent phenomenon affecting northern regions, contributing to progressive desertification that threatens livelihoods and displaces populations [21].

### 3.2.2 Public Health Crises

Public health emergencies cause profound, system-wide disruptions with immediate and long-term consequences for learning outcomes. The resilience of education systems is continuously challenged by disease outbreaks and pandemics across the partner countries, with HIV/AIDS, Ebola, and the COVID-19 pandemic being the most prominent health-related emergencies that affect the education system and disrupt learning. Eswatini, which has the highest HIV prevalence in the world, sees the epidemic directly impacting the teaching labour force and creating a large population of orphaned and vulnerable children [68]. An estimated 32% of children of secondary-school age are orphaned, which creates additional challenges for the education system because these children need extra support academically, emotionally, and financially [69].

The COVID-19 pandemic presented an unprecedented system-wide shock across the GPE partner countries in sub-Saharan Africa, resulting in widespread school closures, disrupted academic calendars and exposed critical gaps in digital infrastructure and distance learning capacity, as evidenced in the education sector plans for most countries such as Zambia, Cameroon, Mauritania, Zimbabwe, and Burundi. For instance, in Zimbabwe, it exposed a lack of planning for disasters, leading to increased dropouts in 2020 due to indefinite school closures and parents in the informal sector being unable to pay fees [70].

For student teachers in Zimbabwe, the pandemic introduced a unique set of personal and professional stressors. These included fear of contracting the COVID-19 virus, illness, isolation, stigmatization, death, anxiety, uncertainty, hopelessness, economic hardships, prolonged teaching practice period, school closures, and transference of face-to-face teaching to online learning [55].

Evidence from policy documents indicates that the COVID-19 pandemic is reshaping strategic planning by including lessons learned. For example, in Kenya, the country's ESP 2023-2027 adopted a strategic goal on "Mainstreaming crosscutting, pertinent, and contemporary issues" and the ESP notes that lessons learnt from the impact of COVID-19 on education and training require a resilient education system that is capable of withstanding emergent shocks [22]. Cameroon's strategy highlights the COVID-19 pandemic's disruptions, projecting that children born pre-pandemic may reach only 40% of their potential productivity due to incomplete education and health deficits [21].

On the other hand, the Guinea education strategic plan highlights the Ebola epidemic (from 2013 to 2016) as the most profound health crisis that affected the education sector. It resulted in closure of schools, disrupted calendars, exposed system fragilities, and reduced the education sector budget to 13.7% of public expenditure excluding debt service in the immediate post-Ebola [71]. Guinea's education system was severely tested by the Ebola epidemic, which led to a national school closure of over six months, quarantines, and curtailed academic programs [72]. This health shock exposed and exacerbated the system's pre-existing weaknesses. Similar challenges were experienced by the education systems of Liberia and Sierra Leone due to the Ebola crisis that ravaged most parts of West Africa.

In Malawi, the COVID-19 pandemic intersected with existing vulnerabilities, such as the high prevalence of HIV/AIDS affecting orphaned and vulnerable students disproportionately [20]. The Malawi education strategic plan states that public health crises affect teacher attrition, increase orphan populations, and impact student wellbeing and attendance [20]. In addition, Lesotho's education strategic plan acknowledges that HIV/AIDS creates both immediate challenges, such as increased absenteeism, trauma, stigma, reduced learning capacity, and psychological distress, and long-term systemic pressures, including teacher attrition, increased need for guidance and counselling services, and demand for inclusive support structures [73].

### 3.2.3 Poverty

Deep-rooted socio-economic challenges pose as persistent stressors, undermining the quality of and access to education. Chronic poverty is a primary driver of exclusion and inequality in education, particularly in rural areas. In Zambia, the situation is dire, with the Poverty Analysis Report showing that 70.6% of children face multiple overlapping deprivations. Poverty persistently undermines education systems through both the demand for and the supply of education.

On the demand side, household poverty creates direct financial barriers to schooling, leading to late enrolment, absenteeism, and dropout, as families prioritize immediate economic survival and children engage in labour. This is a consistent theme in the education strategic plans for Cameroon, Guinea, and Rwanda, which highlight the high cost of school feeding as a big burden to parents and families. On the supply side, economic constraints severely limit the capacity of governments to adequately finance their education sector [21, 71, 74].

Poverty fuels other disruptions, such as teenage pregnancies and child marriages. In Angola, Vaandrager et al. note that "poverty contributes to the high rates of child marriages and teenage pregnancies, and many families that live in poverty see marrying off their girls at a young age as a financial plan" [75].

This argument also resonates with the assertions made in the Guinea education strategic plan, which observes that poverty creates financial barriers leading to school dropouts, child labour, and early marriages, with rural areas showing lower indicators [71].

Chronic underfunding also cripples education systems across the GPE Africa partner countries. For instance, in Ghana, a Free Senior High School (SHS) policy ended up overstressing the education infrastructure and straining the existing human resources, demonstrating how policy-driven expansion can strain an already underfunded system. In Madagascar, only 0.4% of the education budget is allocated to pre-primary, and 16% of children suffer from acute malnutrition, crippling their developmental potential [76, 77]. In Malawi, there is inequity in access to ECE, with only 21% of children from the poorest households attending compared to 55% from the richest [78].

In São Tomé and Príncipe, the CACAE Association (2025) described a system where public schools are underfunded and lack resources, lacking enough teachers and teacher salaries. Schools lack teaching materials, and many classrooms need renovation. In Senegal, austerity policies and underfunding have accelerated the privatization of education and led to a marked decline in the quality of public services. This also affects the quality of learning associated with overcrowding and underfunding in some of the schools. For instance, the student-teacher ratio worsened from 28:1 to 42:1 between 2010 and 2021, and a staggering deficit of 48,696 classrooms and 207,000 desks persists nationwide [79]. This creates a pervasive condition of overcrowding and poor infrastructure, with tangible manifestations like double-shift and multi-grade classes becoming widespread, particularly in urban centres like Dakar, where space is limited.

The Cameroon education strategic plan noted that the country faces significant poverty-related challenges that directly impact education access and quality. The plan revealed that the constantly high poverty level constitutes a substantial hindrance to schooling, with 21.3% of the population living on less than \$1.90 per day in 2021[21]. The strategy also notes that while Cameroon provides free education, schooling for the poorest segments of society remains a challenge because of the opportunity costs associated with child labour contributions to household survival. Thus, poverty creates a vicious cycle, where limited household capacity meets under-resourced systems, fundamentally undermining educational access, quality, and sustainability.

The deep-rooted socio-economic challenges, especially chronic poverty, severely undermine education access and quality in GPE Africa partner countries. Poverty creates financial barriers that impact enrolment, absenteeism, and dropout, while also fuelling disruptions like teenage pregnancies and child marriages. On the supply side, chronic underfunding limits governments' ability to adequately finance education systems, resulting in overcrowded classrooms, insufficient teaching resources, teacher remuneration, and strained infrastructure. This vicious cycle of poverty and under-resourced education systems disproportionately affects vulnerable populations, particularly in rural areas, and fundamentally threatens the sustainability and equity of education.

### 3.2.4 Political Instability and Conflict

Armed conflicts and socio-political crises have led to the destruction of the educational infrastructure, displacement of populations, and long-term deficiencies of education systems with possible collapse. Large-scale displacements create significant humanitarian strains on education systems in host regions, as seen in the education strategic plans for Mauritania and South Sudan, with challenges including overcrowded infrastructure, curricular integration for refugees, and credential recognition.

Conflict is a primary shock that affects educational infrastructure, personnel, and the very process of learning. In the Central Sahel, schools are deliberately attacked, forcing mass closures. For instance, in Burkina Faso, the scale is catastrophic: "approximately 5,336 schools closed in 2024, representing more than 20% of the country's schools, affecting more than 820,000 students and 24,000 teachers".

This demonstrates a systematic dismantling of the education system in conflict zones. It is also worth noting that Guinea-Bissau's education sector has endured chronic political instability since its independence in 1974, culminating in events such as the 2012 military coup that triggered sanctions from the African Union and military intervention by ECOWAS, resulting in substantial salary arrears for teachers, prolonged strikes, and frequent ministerial changes that undermined policy continuity and program implementation [59].

The geographical distribution is concentrated in the northern and eastern regions of Burkina Faso, the northern and central regions of Mali (e.g., Bandiagara, Ségou, Mopti, Timbuktu), and the Tillabéri, Tahoua, and Diffa regions of Niger. Similarly, the civil war in Sierra Leone destroyed nearly 90% of school infrastructure, creating a deficit that has constrained the system for decades.

Somalia represents a case of chronic system-wide collapse due to prolonged conflict, which has made the country one of the most fragile nations globally. This protracted instability, including the collapse of the state in 1991, has led to the disruption of formal education systems. The federal government's limited control has resulted in a fragmented educational landscape, with non-state actors providing most education services.

These armed conflicts directly target education – teachers are kidnapped, schools are destroyed, and a climate of fear undermines teaching and learning [21]. In the Democratic Republic of Congo, the education strategic plan recognizes that conflict is the dominant factor shaping education challenges, with ongoing insecurity in eastern provinces posing direct risks to enrolment and continuity, prompting dedicated risk analysis and mitigation strategies in post-conflict reconstruction efforts [80].

In Cameroon, the dual crises of Boko Haram in the Far North region, kidnappings of 50 teachers and officials fostered fear, diminished teaching quality, and led to the destruction of 74 schools, necessitating long-term reconstruction investments [21]. In addition, the Anglophone conflict in the Northwest and Southwest Regions of Cameroon have led to systematic attacks on schools, forced closures, and internal

displacement. These crises have left more than 1.2 million school-aged children in need of humanitarian assistance. Similarly, in Nigeria, the most severe shock stems from protracted armed insurgency, where the Boko Haram group is opposed to Western-style education and systematically disrupts schooling activities in the areas where they have been active. Northern Nigeria remains a primary zone of “conflict-induced absenteeism” and instability, due to targeted destruction of schools, resulting in school closures and trauma within learning communities.

In Mozambique, the conflict in Cabo Delgado Province has created a human rights and education catastrophe, displacing over 800,000 people, nearly half of whom are children [81]. This conflict has utterly undermined access to education in the region, adding a layer of man-made complexity to the climate challenges. Similarly, in Madagascar, political instability, ethnic conflict, and pervasive poverty drive children into labour or early marriage, directly competing with education [82].

Similarly, the DRC faces one of the world's most complex humanitarian emergencies, rooted in decades of conflict, which has severely affected its education system. UNICEF (2025) reports that “more than 2,500 schools and learning spaces in North and South Kivu have been closed, leaving 795,000 children out of school in that region alone [83]. The Central African Republic and Sudan are also paralysed by chronic violence. In Sudan, the protracted armed post-Bashir conflict has triggered the world's largest internal displacement crisis, with 4.4 million newly displaced people within the country, including approximately 2.5 million children [84].

In Comoros, political instability and teacher strikes create recurrent, human-induced disruptions, leading to temporary school closures and interrupted learning continuity, particularly for students preparing for high-stakes national assessments [85].

Ethiopia has experienced intense internal conflicts that have served as a stark example of what an attack on education entails. For example, the recent war in northern Ethiopia involved violent political and military attacks on education, which resulted in the loss of lives among education personnel and children, and the destruction of hundreds of schools, leaving millions of children out of school. This is not merely collateral damage but a deliberate tactic, as O'Malley (2010) underscores that “attacks on schools have become a tactic of war to weaken the state” [86].

Armed conflicts and socio-political crises have caused widespread and severe disruptions to education systems in GPE Africa partner countries. These conflicts lead to the destruction of infrastructure, displacement of populations, and long-term systemic weaknesses that threaten the collapse of education services. Large-scale displacements strain host communities' education systems, while deliberate attacks on schools and education personnel create a climate of fear and instability.

Countries like Burkina Faso, Somalia, Cameroon, Nigeria, Mozambique, and the Democratic Republic of Congo illustrate how conflict-induced school closures, kidnappings, and violence severely limit access to education, disproportionately affecting millions of children and undermining efforts toward educational continuity and equity.

### 3.2.5 Other Disruptors



**Shortage and uneven distribution of teachers:** Worth noting, education systems contain critical internal vulnerabilities, which are exposed and worsened by external shocks. A universal challenge is the critical shortage and uneven distribution of qualified teachers. For example, in Zambia, the pupil-teacher ratio is alarmingly high, with UNICEF (2023) reporting that nationally, 25 percent of schools have a pupil-teacher ratio of 80:1, with 10 percent of all schools having a pupil-to-teacher ratio of 112:1 [87].

This shortage is particularly acute in STEM subjects and rural areas, a trend confirmed across the Southern Africa sub-region. Other teacher-related challenges include teacher strikes – for example, in Guinea and Côte d'Ivoire – thus causing major losses in instructional time. In Mauritania, teacher absenteeism and gaps in competencies contribute to a foundational learning crisis [25].



**Weak coordination:** Internal system fragilities, such as weak inter-ministerial coordination, inefficient financial allocation, and inadequate data systems, were also flagged in the policy documents as disrupting the proper functioning of the education system, and thus critically limiting the capacity to anticipate and respond to shocks of any kind.

For example, in Guinea, the education strategic plan identifies weak coordination mechanisms among the three education ministries, insufficient decentralized capacity for planning and management, limited financial resources and inefficient allocation, inadequate information systems for decision-making, and weak evaluation and control practices as issues undermining the system's ability to achieve its objectives and respond adaptively to challenges [71].



**Violence, drug, and substance abuse:** Other emerging disruptors as highlighted within the education strategic plans for countries include school-based violence reported in 54% of Guinean schools between 2012 and 2017, and endemic drug and substance abuse in Kenya and Rwanda [22, 74]. Drug and substance abuse is identified by Kenya's education strategic plan as an emerging challenge requiring strategic attention, with the plan noting the need to address drug and substance abuse through educational interventions while acknowledging that certain prevention approaches, including scare tactics and testimonials, have proven ineffective and may inadvertently glamorize use. Rwanda's strategic plan emphasizes teaching national values that discourage drug abuse as part of resilience-building [74].



**Overcrowding:** The push for free primary and secondary education in most GPE Africa partner countries, like Ghana, Zambia, and Lesotho, led to a surge in enrolment without a corresponding expansion in facilities, resulting in overcrowding. In Zimbabwe, the need is so great that over 1,500 new

primary schools and over 3,000 new secondary schools would be needed to accommodate projected increases in the number of learners [88].

This school infrastructure, often not resilient to climate shocks, is ill-equipped for learners with disabilities, further entrenching exclusion. The groups most affected by these systemic failures are learners in rural and remote schools, children with disabilities who lack accessible infrastructure, and students in overcrowded classrooms who suffer from poor quality of education.



**Early marriage and teenage pregnancy:** In Senegal, traditional practices like early marriage and teenage pregnancy are major drivers of school dropouts by girls. A stark study revealed that 54.43% of pregnant girls leave school, and only 15.16% manage to resume their education after a two-year break [55, 89]. This not only wastes public investment but also slows the progression of national primary school completion rates. Regions that are more affected by this vulnerability in Senegal are those with stronger traditional practices, such as Kolda, where these factors aggravate already worrying dropout and repetition rates.



**Disabilities and other marginalized learners:** Education systems systematically struggle to support children with disabilities and other marginalized learners. This synthesis noted that there are inadequate provisions for vulnerable groups in education sector policies and practices. In Liberia, for instance, the system has struggled to include children with special needs in emergency education programs [90].

In summary, other disruptors faced by education systems in GPE Africa partner countries include severe teacher shortages, weak governance, and inadequate infrastructure, which are worsened by external shocks. Challenges like teacher strikes, absenteeism, school-based violence, and substance abuse further disrupt learning. A surge in enrolment without corresponding facility expansion has led to overcrowding, while traditional practices and insufficient support for marginalized groups, including children with disabilities and pregnant girls, exacerbate dropout rates and educational inequities. These disruptors highlight the urgent need for targeted interventions to build more resilient, inclusive, and well-resourced education systems.



### 3.3 Contextual Practices of Education System Resilience

To understand how ESR is practiced within different contexts, we highlight activities and practices that countries are undertaking to strengthen ESR, plan for disruptions, and prevent impacts of shocks and stressors. To understand how ESR is practiced within different contexts, the report highlights activities and practices that countries are undertaking within their Education Strategic Plans (ESPs) to ensure resilient education systems. Nearly all countries that have explicitly included programmatic interventions or strategies within their ESPs have done so, drawing on lessons from the impacts of COVID-19 and Ebola epidemic in West Africa.

For example, for the first time, the Government of Liberia has proactively included in the ESP the development of a policy framework on disaster risk reduction and climate-change adaptation and mitigation in preparation for old and new crises [23]. While the desk review revealed activities targeted to anticipation, planning, prevention, and mitigation, most of the practices described within ESPs relate to strengthening the education system to withstand any disruption and ensure continuity of learning.

#### 3.3.1 Strengthening Country Education Systems

A review of country-specific policies and strategic documents revealed several ongoing actions to strengthen the resilience of education systems to deliver quality and uninterrupted education in the event of a shock or stressor. Strengthening the education systems was mainly related to the following topics within the documents that were reviewed: use of ICT infrastructure, curriculum design, teacher training, and educational decentralisation.

##### 3.3.1.1 ICT Infrastructure

Countries are strengthening their education systems by investing in cutting-edge digital learning tools, Information and Communication Technology (ICT) infrastructure, and technology integration to improve the quality of education and ensure continuation of learning in the event of disruptions. The COVID-19 pandemic and the Ebola outbreak in West Africa provided lessons for African countries to invest in strengthening their ICT infrastructure, cutting-edge digital learning tools and other mechanisms to deliver distance learning. Analysis of education sector plans revealed that ESPs that were developed during or after the pandemic emphasise the strengthening of ICT infrastructure and its integration to support the continuation of learning.

For example, Ethiopia's Education Sector Plan 2020-2025 puts an emphasis on the development and use of digital learning, a move that is viewed to further enhance the introduction of digital technology [45]. In addition, a review of academic literature notes that the COVID-19 pandemic caused a rapid and global shift to remote learning, which dramatically accelerated the adoption and integration of education technology. For example, Mensah & Boateng (2022) highlight the expansion of

remote and blended learning platforms broadcasting curriculum-aligned lessons to reach remote learners during school closures in Ghana [91]. Countries are also investing in Education Management Information Systems (EMIS), and these are helping governments to make timely, evidence-based decisions. For example, Rwanda has strengthened its EMIS to capture learner tracking, dropout rates, and school functionality in emergencies [74].

### 3.3.1.2 Curriculum Design

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Overall, ESPs are developed based on country-specific disruptions, context, and priorities. Subsequently, countries are (re)designing curricula to resonate with the issues faced within the education system. Analysis of education sector plans revealed that many countries, such as Rwanda, South Sudan, Lesotho, Zimbabwe, Malawi, and Cameroon, are integrating disaster risk reduction, environment, and climate change into their national curricula across all levels of education. For example, in Malawi, the ESP promotes tree planting, caring for the environment, and WASH, which has helped to build climate awareness and resilience among learners [20].

In Rwanda, Sierra Leone and Cameroon, the focus is on developing and distributing age-appropriate teaching and learning materials on climate change for learners in pre-primary, primary and secondary schools [21,29,74]. On the other hand, Lesotho, a country faced with high prevalence of HIV/AIDS, emphasizes comprehensive sexuality education, HIV testing and counselling, and integration of health services into education programming [73].

Countries that are severely affected by chronic conflict are integrating peace education into the school and training curricula. For example, Ethiopia and Kenya are including peace education in the school and tertiary institution curricula and co-curricular activities to empower children, youth, and teachers with the knowledge, skills, and values to prevent conflict, resolve disputes peacefully, embrace social-emotional learning, and build inclusive communities [22,45]. Countries affected by conflict have further developed accelerated learning programs for conflict-affected learners. For example, in Somalia, a country that has been ravaged by a protracted conflict for the last three decades, investments in alternative education pathways like Accelerated Basic Education (ABE) programs have increased access for out-of-school children affected by displacement and other disasters [31]. Such ABE programs, combined with support from international actors and NGOs, are gradually embedding a culture of resilience within the Somali education system.

In addition, many African countries have embarked on reforming their education curricula to meet the current and future needs of the education system and the world of work. For example, Kenya and Uganda have implemented curriculum reforms and are now implementing the competency-based curriculum at the secondary school level to meet the 21st-century skills needs for the learners, which are necessary to succeed in today's world and contribute to the human capital development indices [22,92]. Sierra Leone, too, is implementing a curriculum that equips individuals with the values, knowledge, attitudes, skills, and behaviours necessary to live in harmony with oneself, others, and the natural environment.

### 3.3.1.3 Teacher Training

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Investing in teacher professional development is a cornerstone of strengthening education systems, and analysis of education sector plans reveals several efforts to improve the capacity and welfare of teachers. For example, the ESPs for South Sudan, Sierra Leone, Malawi, and Rwanda call for expansion of the preservice and in-service training to include disaster risk reduction and issues related to climate change. In Zimbabwe, the ESP prioritizes training teachers that equips them with competencies to timely respond to emergencies, including the delivery of first aid, and risk/hazard communication [93]. Within conflict settings like in Cameroon, school-level staff and teachers are trained in the provision of psychosocial support to the internally displaced children and refugees [21].

To further strengthen resilience in Ghana, teacher professional development programs have been expanded with an emphasis on digital and student-centred pedagogy, psychosocial support and teacher well-being, as well as inclusive education [91]. South Sudan expanded its Accelerated Learning Program (ALP) to include teacher training for conflict-sensitive pedagogy and trauma-informed instruction [34]. In Madagascar, the Ministry of National Education has initiated a teacher policy reform focused on testing, training, and formally qualifying community-based teachers within pre-primary and primary schools. The reform also targets the professionalization of the teaching force and the improvement of teacher working conditions and compensation [94].

### 3.3.1.4 Educational Decentralisation

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The literature review highlights that countries are engaging in the decentralization of some of the education functions. In most of the literature from the GPE partner countries, decentralization of the ESR functions is perceived as contributing to local-level resilience. For example, policies such as the 2022 Madagascar Emergence Plan and the 2023 National Plan for Emerging Decentralization aim to enhance local decision-making in education service delivery during emergencies.

In Sierra Leone, the government has institutionalised and decentralised the Emergency Education Taskforce that was previously used to address the COVID-19 pandemic and now has become a permanent structure of the education system, with focal persons in each district charged with emergency prevention, school safety, and environmental safety, planning, and coordinating emergency response [24]. The Taskforce is reviewing and upgrading the School Establishment Approval Policy to include Environmental Impact Assessment, enforcing recommendations related to disasters in the school approval policy, and championing tree planting campaigns in all schools and tertiary institutions

### 3.3.2 Anticipating and Planning for Disruptions

Findings indicate that countries are harnessing crisis-sensitive planning, which involves identifying and analysing the risks to education posed by conflict and natural hazards as well as their impact on the education system.

#### 3.3.2.1 Climate-Sensitive Planning

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Countries that are frequently affected by climate-related natural disasters like typhoons and cyclones have embraced climate-sensitive planning where Disaster Risk Reduction and Management (DRRM) activities have been integrated within their Education Sector Plans (ESPs). For example, in Madagascar, the Education Sector Plan (2018–2022) includes a focus on risk reduction and disaster management within schools, and there are discussions to align the school calendar with local agricultural and climatic conditions to curb the high levels of absenteeism associated with the harvest and cyclone seasons. In Mozambique, the National Education Strategic Plan puts significant emphasis on inclusive, flexible, and crisis-ready systems, e.g., promotion of climate-resilient school infrastructure. It further calls for alignment of education resilience with national disaster risk management frameworks and empowers communities to take part in resilience-building initiatives through training.

In Malawi, the National Education Sector Investment Plan (2020–2030) integrates Education for Sustainable Development (ESD) principles across all levels of education by promoting issues such as nutrition education, WASH, and DRRM in schools [20]. The plan recommends that the school curricula include aspects of ESD, such as tree planting and caring for the environment, and this has helped to build climate awareness and resilience among students. DRRM has also been made a national priority and has been integrated into teacher training.

#### 3.3.2.2 Conflict-Sensitive Planning

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Besides climate, countries that are affected by crises are embracing conflict-sensitive planning, and they have further developed frameworks to aid the continuation of learning and setting minimum standards for education in crises and conflict situations. For example, the government of Cameroon, in collaboration with development partners, is prioritizing access to education for refugees and internally displaced children as enshrined in its Education-Training Sector Strategy (2023–2030).

The plan includes a cross-cutting strategy on “resilience of the education system” with an overall aim of strengthening the resilience of the education system so that all children affected by crises have access to quality learning in a healthy, safe, and protective environment [21]. The government is also collaborating with development partners such as the World Bank, UNESCO, and UNICEF to strengthen the capacity of host-community schools to accommodate refugee children from the Central Africa Republic and Nigeria, as well as internally displaced children. In addition, school-level staff and teachers are being trained in the provision of psychosocial support to the internally displaced children and refugees.

In addition, countries that are faced with protracted crises have developed annual Humanitarian Response Plans (HRPs) to coordinate humanitarian needs and response with the international humanitarian community. For example, the Ethiopia HRP for 2024 has outlined immediate, medium, and long-term interventions for the most vulnerable experiencing protracted conflict and climate-induced hazards. Some of the provisions within the plan include:

1. safe and child-friendly learning environments with conflict-trained education personnel;
2. coordination of the provision of life-saving interventions;
3. disaster risk awareness;
4. equitable, safe and inclusive learning environments; and
5. continuation of learning through flexible, appropriate (formal and non-formal) learning programs [95].

The Government of Uganda, the largest refugee-hosting country, has a policy framework for hosting refugees, and the country is committed to the integration of refugees, returnees, and host communities into the national education system. In 2018, Uganda launched a multi-year Education Response Plan (ERP) to help deliver targeted quality education and learning outcomes for over half a million children and youth in refugee-hosting communities [96].

Ethiopia, a second largest refugee-hosting country in Africa, where more than 60% of refugees are school-age children, has developed a National Refugee Strategy and revised and adopted a refugee law that grants refugees the same right of access to education as Ethiopian citizens [97]. These efforts are part of several treaties and declarations that African countries have signed to safeguard the plight of refugees, including the Global Compact on Refugees, the IGAD Nairobi Declaration, and the Djibouti Declaration on Refugee Education.

### 3.3.2.3 Contingency Planning

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The Global Partnership for Education (GPE) Africa partner countries are also engaged in practices related to planning for potential disruptions to education. For example, through participatory approaches, governments are collaborating with development partners and members of the civil society to develop and implement contingency plans at national and sub-national (state, district, school) levels for risk adaptation. In South Sudan and Liberia, the ministries of education support schools to develop contingency plans with a focus on locality-specific hazards such as floods [23, 34].

The plans include safety standards to local hazards, strategies to minimize the use of schools for temporary shelter, school drills to ensure learners and teachers respond to immediate threats, evacuation plans, temporary learning spaces, and alternate modes of instruction to ensure learning continuity among others. In Zambia, a country faced with recurrent climatic shocks, the country's education strategic plan commits to mainstreaming the Climate Change Policy into the education system to enhance environmental sustainability and promote climate resilience as a key driver within the sector [60].

### 3.3.3 Preventing and Mitigating the Impacts of Disruptions

#### 3.3.3.1 School Environment and Infrastructure

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Long-term resilience depends on inclusive, safe, and sustainable infrastructure, including classrooms, and some GPE partner Countries are taking preventive actions to safeguard school and tertiary institutions' infrastructure from natural disasters. As such, countries affected by natural disasters and political crises have prioritized education infrastructure and safe learning environments within their education sector plans. For example, South Sudan has committed to reviewing and updating the construction standards and guidelines for schools and other education facilities to encompass climate-resilient construction methods and materials, especially for flood high-risk areas [34].

Similarly, Zimbabwe's education strategic plan recognizes that school buildings must be constructed to withstand environmental stresses while providing safe learning environments [93]. The integration of disaster risk management into the Zimbabwean planning framework further affirms that climate-related disruptions can compromise educational access, damage physical assets, interrupt learning processes, and strain already limited resources. In Madagascar, the country is partnering with UNICEF to construct cyclone-resistant child-friendly classrooms at lower secondary schools, incorporating gender-sensitive WASH facilities, sports fields, and environmental components such as tree planting while Malawi has established the Safer Schools Construction Guidelines, which have translated into the construction of resilient school structures that resist natural disasters, especially floods, earthquakes, and droughts [20].

The Government of Sierra Leone is conducting risk and danger mapping in schools to ensure schools are not built in disaster-prone zones, transferring schools out of known high-risk zones, tree-planting in schools, and integrating climate education into the school curriculum [29]. South Sudan, with GPE and UNICEF support, has prioritized school reconstruction in flood-affected and conflict-hit areas, including temporary learning spaces and WASH facilities.

Regarding conflict-affected contexts, countries are working towards health, safe and protective environments for all children living in crisis areas. For example, Cameroon's education sector plan calls for school infrastructure that meets education standards, provision of temporary learning spaces, and loyalty bonuses for teachers teaching in difficult areas [21]. South Sudan's ESP prioritises improvements of policies that make school environments safe and conducive for learners, as well as conducting assessments to ascertain that schools offer a child-friendly environment and meet minimum requirements such as safe drinking water, electricity, and WASH facilities, among others [34]. In Ethiopia, the government provides temporary learning spaces, school materials, school meals, WASH facilities, accelerated school programmes, and psychosocial support [45]. Further, Mauritania emphasizes progressive integration of refugees into its education system while accounting for their specific needs and ensuring that benefits to refugees extend to host communities to avoid social tensions [25].



### 3.4 Gender Equity and Social Inclusion Within ESR

Gender inequities persist across various GPE Africa partner countries, significantly impacting the resilience of education systems. Addressing these gender disparities is critical to strengthening education system resilience, as resilient systems must be inclusive and equitable to effectively anticipate, absorb, adapt, and recover from shocks while maintaining access and quality for all learners. The review of academic literature and policy documents prioritizes key issues, including access to education of the girl child, the impacts of conflicts and displacement, poverty and economic disparities, and the challenges faced by marginalized groups. These interconnected issues are critical to understanding and addressing broader social inequalities, as outlined below.

#### 3.4.1 Education of the Girl Child

Gender inequalities affect access to education, especially for girls. Girls' education in GPE Africa countries faces numerous challenges rooted in a complex mix of cultural, socio-economic, and institutional factors. These barriers not only limit girls' access to schooling but also affect their ability to stay and succeed in education. For instance, barriers to girls' education in Ethiopia arise from a multifaceted combination of institutional, socio-economic, and cultural challenges that hinder girls' access to and continuation in school. These barriers include harmful traditional practices (HTPs) such as child marriage and female genital mutilation, which interrupt girls' education and often lead to early dropout. Girls frequently bear a disproportionate share of household responsibilities, including domestic chores and caregiving, which limits their time and energy for schoolwork, causing lateness, absenteeism, and reduced academic performance.

Furthermore, the long distances many girls must travel to reach school, particularly in rural areas, expose them to safety risks and fatigue, further discouraging attendance. Inadequate school infrastructure, lack of gender-sensitive teaching, and limited access to sanitation facilities also contribute to an unwelcoming and unsafe learning environment for girls [45]. In addition, School-Related Gender-Based Violence (SRGBV) and lack of school feeding disproportionately excludes girls and the extremely poor learner [97]. This has been set out in the Education Amendment Acts in some of the GPE Africa partner countries.

In Niger and Chad, early marriage rates remain among the highest globally, contributing to high dropout rates among girls. Relatedly, Guinea ranks as the second-highest country in West Africa after Mali for the proportion of girls married or in union before age 15 years [71]. Early marriage and early or unwanted pregnancies directly cause girls to drop out of school, with regions showing high prevalence of early marriage systematically exhibiting lower educational access rates and gender parity indices well below national averages [71]. In Ethiopia, insufficient gender-sensitive teacher training results in inadequate support for girls' unique educational needs [45]. In addition, Malawi has launched community-based programs to support girls' education in rural areas [98], while Sierra Leone has prioritized re-entry policies for pregnant schoolgirls [99].

Addressing the barriers to girls' education in GPE Africa countries requires a holistic approach that tackles cultural norms, socio-economic challenges, and institutional shortcomings. Empowering girls through education not only benefits individuals but also drives broader social and economic development, making gender equality in education a critical priority for sustainable progress.

There are ongoing initiatives to improve the education of the girl child. For example, Sierra Leone's National Policy on Radical Inclusion in Schools is a transformative framework designed to ensure equitable access to education for all children, especially those historically marginalized, such as girls [100]. The policy addresses multiple barriers hindering girls' education, including poverty, early marriage, teenage pregnancy, caregiving responsibilities, and stigma related to disability, pregnancy, and parental status. It seeks to dismantle systemic obstacles by removing discriminatory practices that exclude pregnant girls and young mothers, providing targeted support to girls from poor and rural communities, enhancing teacher training on gender-sensitive and inclusive methods, improving school infrastructure, and engaging communities to address negative social norms.

Despite ongoing challenges like poverty, limited resources, and entrenched gender inequality, this policy reflects Sierra Leone's strong commitment to radically include girls and marginalized groups in education, aiming to break cycles of poverty and foster national development. This policy aligns with international commitments to gender equality and education for all, underscoring Sierra Leone's dedication to empowering girls through inclusive education.

### **3.4.2 Conflict and Displacement**

Armed conflict has a profoundly devastating impact on children's education across Africa, undermining their fundamental right to learn and thrive. Educational institutions frequently become deliberate targets during conflicts, leading to the destruction of vital infrastructure and the suspension or complete disruption of academic programs [101]. Beyond physical damage, the chaos of armed conflict forces families to flee their homes, resulting in widespread displacement that disproportionately affects women and girls. This displacement exposes girls to heightened risks such as gender-based violence, recruitment into armed groups, early and forced marriages, and teenage pregnancies, all of which severely hinder their access to safe and equitable education.

The interruption of schooling not only curtails educational attainment but also perpetuates cycles of poverty and social marginalization, limiting future opportunities for girls and women [101]. In Somalia and South Sudan, ongoing conflict and displacement further exacerbate gender disparities in education [3]. In the Central African Republic, UNICEF (2023) highlights a critical challenge where approximately one in four children of primary school age do not attend school, with more than half of these being girls [102]. This underscores the disproportionate impact of ongoing crises on girls' education, reflecting deep-rooted gender inequalities and systemic barriers. The disruption caused by conflict, displacement, and economic instability severely undermines educational access and quality for girls, exacerbating vulnerabilities and limiting their future opportunities.

Strengthening the resilience of the education system is essential to mitigate these effects, ensuring that schools can adapt and continue to provide safe, inclusive, and equitable learning environments even amid crises. Addressing these challenges requires comprehensive strategies that protect educational spaces, support displaced populations, community engagement to challenge and transform, and promote gender-sensitive policies to ensure that both girls and boys can continue their education even amidst conflict.

Some of the countries that are affected by armed conflict and displacement of population commit, through their respective ESPs, to support the affected and vulnerable children to continue with learning. For instance, Cameroon, in its ESP, prioritises schooling for refugees, IDPs and host communities: targeted support and prioritisation of infrastructure and staff deployment in regions with large, displaced populations (especially in Far-North, NOSO, and East regions) [21]. On the other hand, the South Sudan ESP commits to running state-level girls' education conferences with influential community leaders to address key barriers and generate locally supported solutions [34].

### **3.4.3 Poverty and Economic Inequalities**

Poverty is one of the main factors determining whether children – especially girls – attend school, with the poorest households being the most excluded from education worldwide. For example, evidence from the Girls' Education Challenge (GEC) revealed that vulnerable groups such as poor families and refugees faced poverty as a critical barrier to accessing education [103]. Economic poverty creates significant barriers to school access through direct and opportunity costs across multiple countries.

Many boys abandon school due to the opportunity cost incurred when boys chose to work and support themselves or their families instead of continuing with education. For girls, poverty intersects with harmful social practices, as families facing economic constraints are more likely to arrange early marriages. Youth employment pressures constitute another poverty-related stressor in Burkina Faso, where young people face pressures to enter income-generating activities rather than continue schooling, particularly in areas affected by artisanal mining, with this economic pressure affecting both enrolment and retention, particularly at post-primary and secondary levels [35]. Similarly, in Malawi, learners face comparable obstacles rooted in gender inequality. Poverty and traditional gender roles often limit learners' access to education [20].

Several key policies address how poverty and economic inequalities affect education, aiming to protect and maintain learning opportunities for children affected by these issues. For instance, Ghana's Ministry of Gender, Children, and Social Protection (MoGCSP) supports gender equity through policies such as the National Gender Policy, which seeks to increase girls' access to school. The Ghana ESP emphasizes deployment of key social protection programs, such as Livelihood Empowerment Against Poverty (LEAP), which provide cash transfers to more than 200,000 poor households, with a focus on those with orphaned and vulnerable children.

LEAP supports school attendance with conditional cash awards, resulting in higher enrolment, attendance, and educational spending for benefiting children than their classmates. It helps families with school expenses like textbooks and clothes [104].

Sierra Leone's Ministry of Basic and Senior Secondary Education (MBSSE) implemented a National Policy on Radical Inclusion (2021) to improve access to quality education among the most marginalised populations, with particular focus on basic and secondary education. Specifically, it prioritises children with disabilities, girls (particularly pregnant girls and their parents), rural children, and those from low-income households [29]. This policy aims to provide inclusive learning settings, help vulnerable learners, engage families and communities, and promote an enabling policy environment.

#### **3.4.4 Marginalised Groups**

When education systems ensure equitable access and participation for girls and marginalized groups, they foster social cohesion and empower communities to recover and adapt more effectively during crises [11]. In some of the GPE Africa partner countries like Zimbabwe, the ministries of education focus on the needs of the most marginalised learners and address inclusivity in education through the psycho-social services, special needs, and learner welfare programs [93]. In each program, the identification of learners with disabilities and how to support them is undertaken and covers pre-primary to secondary school.

By addressing the needs of marginalized learners, including those with disabilities and those affected by gender-based violence or poverty, the system strengthens its capacity to maintain equitable access and quality education under varying conditions. Furthermore, collaboration with other ministries and the provision of psychosocial support enhance the system's ability to respond to learners' holistic needs, thereby fostering an education environment that is both protective and adaptive in the face of social and economic stresses.



*School girls during a coloring session in class.*

## 4. CONCLUSION

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Education system resilience is understood differently across GPE Africa partner countries, shaped by their unique priorities, history, and prevalent challenges or disruptions. Through a comprehensive thematic analysis of available literature, including policy documents, this desk review presented insights on how GPE Africa partner countries understand education system resilience and how it is practiced within the different contexts. The review shows that the concept is still evolving, and it is dynamic based on the context, nature of disruptions, and other factors. Overall, the analysis showed that countries generally perceive ESR as the collective ability of institutions, communities, and education systems to sustain learning despite disruptions.

While the explicit term “education system resilience” is not explicitly and widely used, especially in most of the government policy documents that were reviewed, it was observed that the policy documents recognize the linkages between education with other terms such as vulnerability, disruptions, disasters, education in emergencies, and resilience. This analysis of policy documents revealed that some governments are committed to utilizing education to promote DRR, equity, support peacebuilding, and strengthen resilience in crisis-affected contexts. The use of the term “education system resilience” is gaining more traction and prominence following the COVID-19 pandemic that saw an interruption of education for millions of learners globally.

Analysis of education strategic plans and academic literature revealed that African countries face an intersection of climate-related disasters and conflict that compound pre-existing vulnerabilities, disproportionately affect marginalized groups, and create a vicious cycle in which each crisis further erodes the system's capacity to withstand the next. Therefore, the core image portrayed by a resilient education system in the face of diverse disruptions is the proactive capacity to anticipate, absorb, adapt, and transform, ensuring continued access to quality education for all, particularly vulnerable learners.

Overall, countries approach this resilience through four lenses: crisis preparedness and risk management; maintaining learning via adaptive and blended delivery; community-led survival (agency of communities and local actors to sustain learning) in fragile settings; and specific stakeholder roles and priorities in the ecosystem. These perspectives often overlap and reflect the practical realities and priorities of each country.

Based on the policy documents reviewed, there are several activities that countries are undertaking in relation to the practice of ESR, especially in terms of system strengthening. Countries are strengthening their education systems to better handle future crises by incorporating strategies such as the use of ICT infrastructure, curriculum redesign, teacher training, and decentralisation into their Education Strategic Plans, which are key documents for education programming in GPE Africa partner countries. These practices are largely informed by past experiences with the COVID-19 pandemic and Ebola in West Africa, which severely disrupted the education systems with school closures. The concept of gender equity and social inclusion is

also pronounced in the ESPs across the GPE Africa partner countries.

Synthesis of these policy documents showed that countries emphasize and prioritize gender equity and inclusion within their strategic planning for the education system and as one of the levers for ensuring education system resilience. They highlight gender inequities (stemming from factors like early marriage, poverty, conflict, and gender-based violence) which disproportionately harm girls and marginalized learners, limiting their access to quality education.

Some countries, like Malawi and Sierra Leone, have introduced initiatives to support girls' education, including re-entry policies for pregnant girls and gender-inclusive education policies. Therefore, to overcome these challenges and create resilient education systems, contextual targeted policies, inclusive programs, and collaborative efforts are vital. Prioritizing the education of girls and supporting vulnerable groups, including children with disabilities, is essential to guarantee that no one is left behind in times of crisis.

The findings from this desk review report indicate that ESR is a relatively new concept that is starting to emerge in key education policy documents, especially ESPs. Explicit usage of this terminology, as well as practices associated with ESR, notably increased after the COVID-19 pandemic. Ultimately, the transition from understanding education system resilience to practicing it requires a deliberate shift in policy and practice. For policymakers, this means moving beyond reactive crisis management to integrating ESR into the core of education policy documents, especially the Education Strategic Plans. In practice, education leaders must prioritize interventions and models that are inclusive to ensure that the most vulnerable groups are not left behind during the next inevitable disruption.

Looking ahead, research activities will involve exploring the meanings and practices of ESR through interviews with key stakeholders, including government officials, educators, and the communities. Continuing to study this topic is vital because, as climate-related disasters and regional conflicts evolve, current frameworks risk becoming obsolete. Only through sustained, evidence-based research can we refine these adaptive strategies, ensuring that African education systems do not just recover from shocks, but transform to withstand them.

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