AdaptED

Observatory for Educational Resilience in Latin America and the Caribbean

Thematic Report 1:

Disasters and education in Latin America and the Caribbean: **Impacts, challenges, and opportunities for resilience**

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GRADE Group for the Analysis of Development

SUMMA Laboratory of Education Research and Innovation for Latin America and the Caribbean

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Editor's note: This publication uses inclusive terms such as "children", "parents", "guardians" and others referring to both men and women.

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Abbreviations

CDEMA	Caribbean Disaster Emergency Management Agency
CSESI	Climate Smart Education Systems Initiative
ECLAC	Economic Commission for Latin America and the Caribbean
GADRRRES	Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector
GPE	Global Partnership for Education
IDB	Inter-American Development Bank
INEE	Inter-agency Network for Education in Emergencies
IPCC	Intergovernmental Panel on Climate Change
LAC	Latin America and the Caribbean
OECS	Organisation of Eastern Caribbean States
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
PDC	Pacific Disaster Center
SERT	Student Emergency Response Team
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund

Executive summary

In 2025, AdaptED published a comparative report examining how educational resilience is understood at the system level across 11 Global Partnership for Education (GPE) countries in Latin America and the Caribbean (LAC). Building on those findings, this report is one of a series of thematic reports focusing on three key threats to the continuity of education services: disasters, migration, and violence. The series examines past events and their impacts, explores the varying levels of exposure and vulnerability to risks across GPE countries in the region, and identifies resilience practices that enable education systems to respond, adapt, and recover.

The first in the series, this report examines the relationship between disasters and the education sector in the region, with the dual aims of understanding how disasters affect education systems and identifying progress in educational resilience practices in the region in response to such disruptions. In recent years, evidence has shown the significant impact of disasters on children and adolescents in LAC: in particular, more than 11 million experienced disruptions to their education as a result of around 60 disasters between 2000 and 2019. This highlights the need to strengthen the resilience of education systems to ensure educational continuity in the face of recurring crises (GADRRRES, 2022, p. 16). Drawing on case studies from three countries in the region—Dominica, El Salvador, and Saint Vincent and the Grenadines—this report analyzes the relationship between disasters and education, identifies promising practices, and provides recommendations for education policy decision-making.

The findings show that climate change has intensified the frequency and severity of extreme events, disproportionately affecting lower-income countries and vulnerable populations. In response, educational resilience emerges as a process shaped by prior experience of the impact of disasters, which in some cases has led to the reorganization and strengthening of response capacities of education systems. Although countries in the region are progressing at different rates depending on their contexts and capacities, the main achievements are focused on school safety, particularly infrastructure and student well-being. In addition, in some cases there has been progress in integrating disaster risk reduction into the curriculum and teacher training, and the implementation of risk management plans. The analysis also highlights the importance of examining both the direct effects of disasters on education service provision, and their indirect effects associated with the social and economic impacts influencing educational trajectories.

The case studies were selected to explore key approaches in the region. First, Dominica stands out for its strategic, nationwide approach to resilience based on the principle of *build back better*, which integrates infrastructure, curriculum, and planning. Meanwhile, Saint Vincent and the Grenadines exemplifies a school-centered approach, where resilience is operationalized through regulatory frameworks, the establishment of school committees, and teacher training. Finally, El Salvador is an example of an institutional approach, characterized by the adoption of mandatory risk management frameworks, intersectoral coordination, and investment in infrastructure. At the regional level, while progress has been made in coordination through a range of frameworks, agencies, and initiatives, there is still a need to strengthen the exchange of experiences, move toward common agreements, and define priorities aligned with national contexts.

Finally, the report presents recommendations aimed at strengthening integrated educational resilience. At the system level, it is essential to consolidate policy frameworks and coordination mechanisms that guide coherent responses to disasters. At the institutional level, there is a need to prioritize preparedness and anticipation, build capacities in the education sector, and strengthen the evidence base for decision-making. At the school level, it is critical to integrate risk management and climate change into the curriculum, to ensure learning continuity, and to ensure schools are safe and supportive spaces.

Disasters not only affect educational access and completion, but also undermine learning quality, deepening existing educational inequalities. Highlighting practices that strengthen system capacities from an educational resilience perspective is therefore essential.

1. Towards a better understanding of disasters: Conceptual perspectives and the situation in Latin America and the Caribbean

Resilience refers to the capacity of systems to withstand, respond to, and recover from various threats and/or disruptions. AdaptED's first report[1] (Ballesteros et al., 2025) brought that concept to bear on education, analyzing how educational resilience and related concepts are reflected in education laws, curricula, and education development plans across the eleven focus countries of the Global Partnership for Education[2] (GPE). Based on that study, and subsequent AdaptED research with experts at the system level, the link between "natural" disasters and the education sector emerged as a key topic for in-depth analysis of educational resilience.

Latin America and the Caribbean (LAC) is the second most disaster-prone region in the world. Between 2000 and 2022, a total of 1,534 disasters were recorded, including hurricanes, earthquakes, floods, droughts, and other phenomena associated with climate change to varying degrees, affecting approximately 190 million people (UNDRR & OCHA, 2022, p. 8). Those living in contexts of poverty, economic and political crises, urban and environmental challenges, labor exploitation, and violence were the most affected. Moreover, data reveal the particular risks and impacts of disasters faced by children and adolescents in the region. Together, these dynamics show how the region is exposed to interconnected risks that exacerbate conditions of vulnerability, highlighting the need to strengthen capacities for disaster preparedness, response, and recovery (UNDRR & OCHA, 2023).

This report is the first in a series on educational resilience and examines the relationship between disasters and the education sector in LAC. It aims to understand how disasters affect education

1 In 2025, AdaptED published its first report titled *How is educational resilience understood in countries in Latin America and the Caribbean?* (https://adapted-lac.org/recurso/reportes/como-se-entiende-la-resiliencia-educativa-en-los-paises-de-america-latina-y-el-caribe/). This study provided the first comprehensive examination of educational resilience in the region, based on analysis of education laws, curricula, and current strategic plans in the 11 partner countries of the Global Partnership for Education (GPE). Based on this comparative report, three priority themes were identified for subsequent reports, corresponding to the main disruptions affecting the region: disasters, migration, and crime and violence.

2 GPE is the largest global fund and multi-stakeholder partnership dedicated to improving education in lower-income countries, working to ensure all children receive quality education and can reach their full potential. GPE countries in Latin America and the Caribbean are Bolivia, Belize, Dominica, El Salvador, Grenada, Guyana, Guatemala, Haiti, Honduras, Nicaragua, Saint Lucia, and Saint Vincent and the Grenadines. For more information, see: https://www.globalpartnership.org/who-we-are/about-gpe.

systems, and to identify progress in educational resilience practices in the region in response to such disruptions. This first section presents a conceptual framework on disasters and related concepts within the education sector, along with an overview of disasters and their impact across the region. The second section examines three case studies—Dominica, Saint Vincent and the Grenadines, and El Salvador— highlighting promising practices aimed at strengthening educational resilience to disasters. The third section analyzes the direct and indirect effects of disasters on education systems, to identify impacts across multiple levels. Finally, based on these findings, the report recommends improvements to the focus and scope of current and future initiatives.

1.1 Conceptual framework: The debate on the nature of disasters

The aim of this first section is to explore the conceptualization of the term "disasters", addressing existing debates around their natural and human dimensions, and how the term has been approached by international organizations working in this field. Within this framework, other concepts associated with disasters will also be examined, to lay the conceptual groundwork for exploring how disasters intersect with education and resilience.

1.1.1 Understanding disasters beyond the natural

It is increasingly and emphatically recognized that disasters are not solely natural phenomena, but rather the result of the interaction between hazards and social, economic, and environmental conditions (UNDRR & OCHA, 2022). In some cases, human action is linked to an increase in the frequency of disasters, and in others to their having a greater impact than would otherwise be expected. Many international organizations, such as the United Nations Office for Disaster Risk Reduction (UNDRR[3]), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Office for the Coordination of Humanitarian Affairs (OCHA[4]), and the United Nations Development Programme (UNDP), together with academics and professionals

3 UNDRR is responsible for facilitating and providing support for decision-making on disaster risk reduction at the global level. It provides technical assistance, promotes understanding of risk approaches, raises awareness about disaster prevention, and works with various organizations, agencies, and governments. More information is available at https://www.undrr.org/es.

4 OCHA coordinates global emergency response efforts to protect people in humanitarian crises. See the website at https://www.unocha.org/.

in the field, have advanced this discussion and developed new frameworks and strategies to address the issue.

The first AdaptED report (Ballesteros et al., 2025) used the UNDRR Sendai Framework's definition of disaster, as being:

> *"a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts"* (United Nations, 2016, p. 13).

This initial definition already signals that disasters are complex phenomena, and conceptually distinct from hazards. Building on this premise, the present analysis explores that distinction further through a broad review of the literature.

Disasters have been defined as "the combination of natural phenomena, human action, and pre-existing conditions of physical, social, economic, and environmental vulnerability affecting people and human settlements" (Cecchini et al., 2017 in Cecchini et al., 2021, p. 2). Criteria for identifying a disaster include incidents with 10 or more deaths, where 100 or more people are affected, where a state of emergency is declared, and/or where an international request for assistance is made. According to the Intergovernmental Panel on Climate Change[5] (IPCC), as disruptions occurring in contexts of vulnerability, these events have material, social, economic, and environmental consequences, requiring both immediate response strategies and long-term recovery efforts (IPCC, 2012, p. 4 in Cecchini et al., 2021).

In this way, natural hazards do not always lead to disasters, but they are more likely to do so when conditions of vulnerability are present. In the context of disasters, UNDRR (2017) defines vulnerability as the conditions determined by physical, economic, environmental, and social factors or processes that increase the susceptibility of individuals, communities, or systems to the damaging effects of a hazard.

This conceptual understanding calls into question the use of the term "natural," as noted in the *Overview of Disasters in Latin America and the Caribbean 2000–2022*, which states that "the term 'natural disasters' is no longer used, as a clear recognition of the role of societies in transforming

5 The IPCC was established in 1988 and is responsible for providing scientific information and assessments on climate change, its impacts, future risks, and options for adaptation and mitigation. See the website at https://www.ipcc.ch/

natural phenomena or hazards into disasters" (UNDRR & OCHA, 2022, p. 11). In addition, many hazards occur simultaneously, as in the case of the COVID-19 pandemic and climate change, generating even more devastating consequences and highlighting the need for a systemic, multi-hazard risk approach, as well as for risk mitigation, preparedness, and anticipatory action in the humanitarian sector (UNDRR & OCHA, 2022, p. 10). In this report, the term **disasters** will be used to refer to impacts that reveal the interaction between hazards and pre-existing societal vulnerabilities. Relatedly, **hazards** will be understood as potentially harmful events or phenomena of natural or human origin, such as floods, storms, or heatwaves, which, depending on the context in which they occur, may or may not result in a disaster.

Based on this conceptual foundation, it is possible to move toward a more holistic understanding of disaster risk, as proposed by UNDRR (2017). This approach is characterized by the combination of three key concepts: (1) ***hazards***—a process, phenomenon, or human activity that may cause loss of life, injury, or other health impacts, property damage, social and economic disruption, or environmental degradation; (2) ***exposure***—the situation of people, infrastructure, housing, production capacities, and other tangible human assets located in hazard-prone areas; and (3) ***vulnerability***—the conditions determined by physical, economic, environmental, and social factors or processes that increase the susceptibility of individuals, communities, or systems to the harmful effects of a hazard.

Adopting disaster risk as an analytical approach for the region is relevant for identifying how hazards interact with conditions of vulnerability, which vary across geographical contexts and produce uneven impacts on populations. One of the areas where these dynamics are most evident is education. Education systems face the challenge of ensuring learning continuity and strengthening their resilience capacities in the face of increasingly frequent and complex crises.

1.1.2 Rethinking educational resilience in the face of disasters

A review of the disasters literature finds other related terms which are also relevant for analyzing the link between disasters and education. First, there is ***disaster risk management***, which refers to the process through which policies and strategies for disaster risk reduction are developed and implemented to prevent disasters, strengthen resilience, and reduce disaster-related losses (UNDRR, 2016). Additionally, analysis brings into focus the concept of ***education in emergencies***, used by UNESCO, the United Nations Children's Fund (UNICEF), and the World Bank, among others, which is defined as opportunities to access quality learning in crisis situations. This involves

promoting physical, psychosocial, and cognitive protection, where the right to education is not undermined due to disruptions such as disasters (INEE, 2024). Finally, the concept of ***school safety*** proposed by the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES) focuses on protecting the health and well-being of school users through the management of educational infrastructure, care for staff, and the provision of psychosocial support (GADRRRES, 2022).

Resilient education systems are therefore essential for ensuring learning continuity in times of crisis such as disasters. An estimated 40 million children had their education disrupted by climate-related events in 2024, highlighting the need for governments to strengthen the resilience of their education systems in the face of such threats, particularly those related to climate change (Nusche et al., 2024). This process goes hand in hand with strengthening capacities for adaptation, coping, prevention, anticipation, recovery, and mitigation (Cameron et al., 2024; USAID, 2020), as highlighted in the Observatory's first report (Ballesteros et al., 2025).

Furthermore, emphasizing the link between resilience, disasters, and climate change helps identify global frameworks and disaster risk reduction strategies that align with the capacities and potential of education systems. For example, disaster risk management "has incorporated notions such as *'build back better'* and '*bounce forward*,' which seek to integrate post-disaster development, transformation, and adaptation capacities into the broader concept of resilience" (Graveline & Germain, 2022, p. 332). In addition, the *Sendai Framework for Disaster Risk Reduction 2015–2030* identifies as Priority for Action 3 to "Invest in disaster risk reduction for resilience," highlighting the need to strengthen the economic, social, health, and cultural resilience of individuals, communities, countries, and the environment (UNDRR, 2020). Within this framework, the need to move beyond the notion of the "natural" is emphasized: disasters involve social processes that both reveal and deepen pre-existing inequalities (ECLAC, 2014; Vargas, 2015 in Cecchini et al., 2021; Inter-Agency Standing Committee & European Commission, 2022).

Based on the above, the effects of disasters on education cannot be explained solely by the intensity of hazards, but are also shaped by structural factors such as levels of inequality, institutional fragility, and response capacity in specific contexts. This perspective can be understood through the concept of the ***vulnerability trap***, which, according to Hugon (2017), explains how poverty creates conditions of greater exposure and lower capacity to respond to risks. As a result, when disasters occur, vulnerable groups experience more severe impacts, ultimately reinforcing and exacerbating

their initial conditions. A clear example of this situation is when the poorest populations tend to live in the most disaster-prone areas and are also the least able to respond to them.

According to Cavallo et al. (2010), vulnerable populations, such as persons with disabilities, Indigenous and Afro-descendant populations, those living in poverty or extreme poverty, migrants and displaced populations, and/or children and women, often have a lower capacity to cope with and recover from the consequences of disasters (Cavallo et al., 2010). In the context of education, this approach can be expanded beyond structural conditions such as poverty by incorporating additional factors that affect students specifically. For example, when children experience sleep problems, anxiety, or depression, and also have to manage low energy levels associated with poor nutrition, their educational trajectories in terms of access, retention, and quality are seriously compromised. These limitations affect not only their academic performance but also their overall development and capacity-building, as will be discussed in the following section.

In this regard, capacity-building, both at the individual and systemic levels, must be grounded in each country's specific context, in terms of history, language, and educational characteristics and challenges, as well as structural and cultural dynamics, and the interaction between these spheres. Thus, conceptual and practical developments must incorporate local and regional dynamics to enable more effective information adaptation and mobilization (Aydos et al., 2025).

The preceding discussion shows how the link between disasters and education has been conceptualized through different, complementary approaches, including risk reduction, educational continuity in crisis contexts, and the safety of school communities. These perspectives reflect important developments in how education systems prepare for and respond to disruptions caused by disasters. They also point toward educational resilience as a unifying perspective that brings these efforts together, emphasizing capacity-building for anticipation, adaptation, and response within education systems.

These conceptual developments take place in a regional context characterized by increased exposure to risks, persistent conditions of vulnerability, and the intensification of climate events, which generate differentiated impacts on populations and widen existing inequalities.

1.2 Overview of disasters in GPE countries in Latin America and the Caribbean

This section provides a regional overview of data on the occurrence, risk, impacts, and differentiated effects of disasters among GPE countries. In LAC, as in other regions, climate change has significantly increased the occurrence of disasters, disproportionately affecting lower-income countries and vulnerable populations. As long-term climate change advances, many extreme weather events are occurring with greater frequency and severity, such as droughts, wildfires, and extreme temperatures (Nusche et al., 2024).

The World Bank's Climate Change Knowledge Portal shows the average occurrence of hazards in the region over the past 40 years. Storms have been the predominant hazard for most GPE countries in LAC, with Dominica the most frequently affected. The second most common hazard is flooding, which is recorded in most countries although Guyana has been particularly affected.

Table 1

Occurrence of hazards in GPE countries between 1980 and 2024

GPE Countries	Hazards						
	Storms	Floods	Extreme temperatures	Earthquakes	Droughts	Epidemics	Volcanic activity
Belize	66.7	22.2	5.6	-	-	-	-
Dominica	90.9	-	-	9.1	-	-	-
El Salvador	31.4	25.7	1.4	11.4	8.6	14.3	2.9
Grenada	75.0	-	-	-	25.0	-	-
Guatemala	18.2	30.6	3.3	10.7	5.8	7.4	9.1
Guyana	-	81.8	-	-	18.2	-	-
Haiti	32.3	51.6	-	3.2	4.8	6.5	-
Honduras	29.4	41.2	-	3.5	12.9	9.4	-
Nicaragua	35.5	25.0	-	6.6	7.9	14.5	5.3
Saint Lucia	63.2	15.8	-	5.3	5.3	5.3	-
Saint Vincent and the Grenadines	55.0	30.0	-	-	5.0	5.0	5.0

Note: Dashes (-) indicate the absence of data for those hazards in the country. Data highlighted in red, or in similar shades, indicate high occurrence, while at the opposite end, green indicates lower occurrence during that time period. Based on data from the World Bank (n.d.)

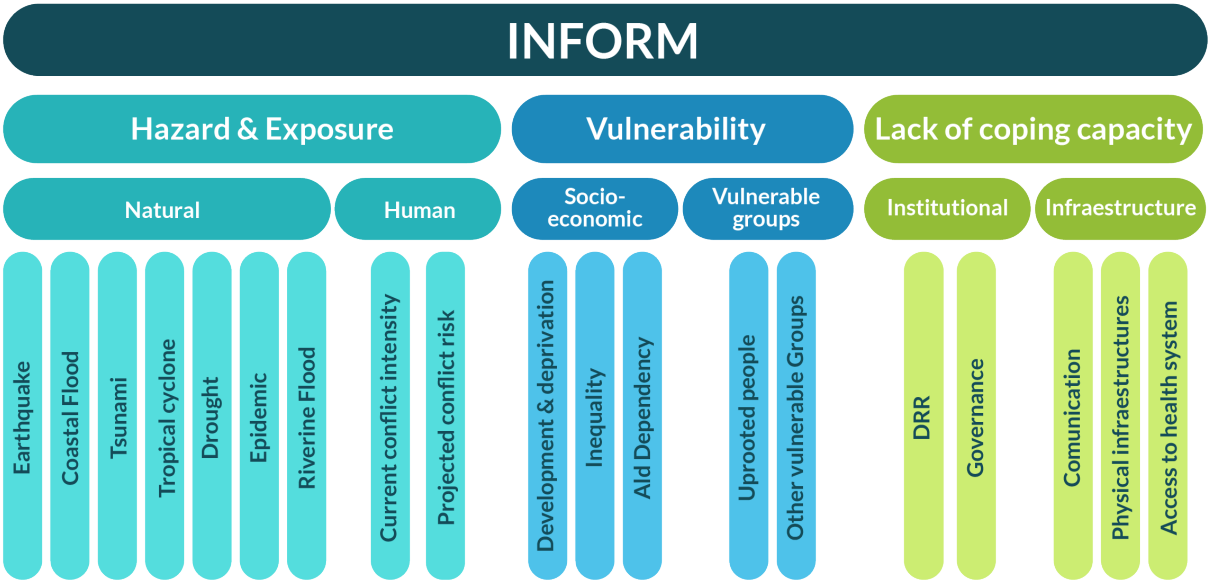
Other hazards occur less frequently across these countries yet can still generate significant impacts. For example, although rare, the 2010 earthquake in Haiti caused the death of more than 200,000 people, and had a devastating impact on infrastructure (Durán, 2010, p. 13). The disaster laid bare the pre-existing living conditions of the Haitian population, while significantly worsening the country's political and economic crisis and increasing violence and displacement. Furthermore, 80% of schools were damaged or destroyed, affecting educational continuity for children and adolescents (UNDP, 2011, p. 4).

Therefore, beyond the frequency of disasters, other factors relating to countries' risk and vulnerability must be taken into account. In this regard, the INFORM Index provides a useful framework for analysis. This multi-sectoral initiative, led by the European Commission's Joint Research Centre, has developed a Risk Index that assesses a country's level of vulnerability and exposure to potential crises, as well as its capacity to prepare for, respond to, and recover from them (Marin-Ferrer et al., 2017). This index can serve as a key tool for governments in decision-making related to prevention, preparedness, and response, as it provides a specific risk profile for each country.

The construction of the index is based on three dimensions: (i) ***hazard and exposure***, which represents the potential risk of disasters or conflicts by considering the likelihood that people are physically exposed to them; (ii) ***vulnerability***, which refers to the social, economic, and political conditions that make people more prone to suffering harm[6] when disasters or crises occur; and (iii) ***coping capacity***, which measures the level of preparedness of each country to face and respond to crises and disasters, specifically considering available resources, institutional capacity, and infrastructure (Marin-Ferrer et al., 2017). The index is presented in Figure 1.

6 This second dimension does not focus on the magnitude or frequency of disasters, but rather on identifying population groups that are already at greater risk because they live in poverty, lack access to education, and/or face shortages of basic services, among other factors.

Figure 1
Structure of the INFORM Risk Index



Note: Authors' own adapted from European Commission, Disaster Risk Management Knowledge Centre (2025).

Each dimension is scored on a scale from 0 to 10, where 0 indicates a low level and 10 a high level of risk. For example, Haiti shows the highest level of risk among GPE countries, across all categories, with the highest probability of hazard and exposure (7.5 points), greatest vulnerability associated with social, economic, and political conditions that make it more prone to impacts (6.7), and most limited coping capacity to respond to these crises (7.3). At the other end of the scale, Grenada and Dominica showed the lowest overall risk scores across these dimensions. Table 2 presents these data from the Risk Index and its indicators for GPE LAC countries.

Table 2
INFORM Risk Index 2025 and component indicators, GPE countries

GPE Countries	Risk index	Components		
		Hazard and exposure	Vulnerability	Lack of coping capacity
Haiti	7.2	7.5	6.7	7.3
Honduras	5.8	6	5.5	5.9
Guatemala	5.3	4.8	6.2	5
Nicaragua	4.9	4.4	4	6.5
El Salvador	4	3.8	4.6	3.7
Guyana	3.9	3.1	3.9	4.9
Belize	3.6	2.1	4.8	4.8
Saint Vincent and the Grenadines	3	1.8	3.4	4.2
Dominica	2.8	2.2	2.7	3.7
Grenada	2.6	1.7	3	3.5
Saint Lucia	2.6	1.9	2.5	3.7

Note: Data accessed July 16, 2025. Taken from European Commission, Disaster Risk Management Knowledge Centre (2025).

Table 3 presents data from the Index relating specifically to the level of each country's exposure to six types of hazards. Haiti stands out for its high exposure to tropical cyclones (8.9), as do Saint Lucia (8.0), Saint Vincent and the Grenadines (7.8), and Dominica (7.8), three of the four GPE countries that are members of the Organisation of Eastern Caribbean States (OECS). In the case of earthquakes, Guatemala and El Salvador have the highest levels of risk, with scores close to 10 points. They are followed by Nicaragua (8.2), Honduras (8.4), and Haiti (8.1). By contrast, while Guyana has a score of only 0.1 for hazard and exposure to earthquakes, its score increases considerably in relation to coastal flooding (7.0) and river flooding (6.9).

Table 3

INFORM Risk Index 2025 Hazard and Exposure Indicators, GPE countries

GPE Countries	Hazard and exposure	Level of exposure					
		Coastal flooding	Earthquake	Tropical cyclone	Droughts	River flooding	Tsunami
Haiti	7.5	4.5	8.4	8.9	3.8	4.6	4.1
Honduras	6	4	8.1	4.6	5	5.4	6.4
Guatemala	4.8	3.7	9.5	3.7	3.5	4.2	6.8
Nicaragua	4.4	4.3	8.2	4.2	4	5	7.2
El Salvador	3.8	4.3	9.2	1.3	3.6	3.5	7.6
Guyana	3.1	7	0.1	0	3.7	6.9	2.5
Dominica	2.2	2	3.8	7.8	0	0	5.5
Belize	2.1	6	2	5	2.2	2.2	3
Saint Lucia	1.9	2.6	4.4	8	0.5	0	0
Saint Vincent and the Grenadines	1.8	1.8	4.8	7.8	0.5	0	0
Grenada	1.7	2.5	3.4	6	4.4	0	0

Note: The Risk Report includes measurements for these six hazards; data were not available for other types of hazards such as volcanic eruptions or landslides. Data highlighted in red or similar shades correspond to the highest values recorded among GPE countries. Data from European Commission, Disaster Risk Management Knowledge Centre (2025).

Other indices include the Climate Risk Index,[7] published by the German organization Germanwatch, which provides a long-term view of the countries most affected by climate change and extreme weather events over the period 2000 to 2019. The score is based on both human and economic losses caused by climate-related disasters (hurricanes, floods, droughts, etc.), highlighting those

7 The Climate Risk Index (CRI) is measured based on the human and economic impacts of extreme weather events, considering material damage, affected populations, and people who are injured or displaced. The data sources used include the international EM-DAT database, the World Bank, and the International Monetary Fund (IMF). The Index also incorporates the Human Development Index (HDI) as a reference for interpreting the data. In the 2025 edition, Germanwatch introduced an adjustment that uses the HDI as an approximate measure of data availability in each country. Under this approach, countries with lower HDI may face limitations in recording disaster impacts; therefore, a relatively "favorable" CRI score does not necessarily reflect lower levels of impact, but rather possible gaps in reported information. For more information, see the report at: https://www.germanwatch.org/en/cri.

countries that have been consistently the most vulnerable over two decades. Unlike the INFORM Risk Index, this focuses not only on the occurrence of events over a given period but also on the degree of impact they generate. According to recent results, among the most affected countries in LAC are Haiti, Dominica, and Guatemala (Eckstein et al., 2021). In the 2025 report, Dominica is identified as the country which experienced the highest risk and impact from climate-related events between 1993 and 2022. This is largely explained by its regular exposure to tropical cyclones, such as Hurricane Maria in 2017, Hurricane Omar in 2018, Hurricane Dorian in 2019, and Hurricane Debby in 2020. In addition, the report notes that the country is exposed to storms approximately every two years (Adil et al., 2025, p. 11).

It is important to understand how different types of hazards affect particular LAC countries, as their impact varies depending on geographic location, socioeconomic vulnerability, levels of preparedness, and coping capacity. ECLAC (2022) reports that floods (48%) and landslides (11%) were the most prevalent hazards across the region between 1960 and 2020. For Caribbean countries specifically, storms accounted for 58% and floods 27% of all disasters during that period. In the case of tropical storms and hurricanes, the 2020 season—marked by Hurricanes Eta and Iota—affected Nicaragua, Honduras, and Guatemala, but also caused flooding and displacement in Belize and El Salvador (UNDRR & OCHA, 2022). Honduras, Guatemala, Haiti, Mexico, and Cuba are the five LAC countries with the most people affected by storms between 2000 and 2022 (UNDRR & OCHA, 2022, p. 18).

The impact of earthquakes is also shaped by the factors mentioned above. For example, although the 2010 earthquake in Chile had a greater magnitude than that which struck Haiti that same year (8.8 and 7.0 respectively), the latter had more severe material, human, economic, and social consequences. In the case of droughts, the countries with the largest affected populations were Haiti, Guatemala, El Salvador, Honduras, and Nicaragua. For floods, a key factor in determining their impact is location, as certain geographical characteristics increase exposure and vulnerability (UNDRR & OCHA, 2022).

Another key aspect of disasters in the region is that their impact varies not only across countries, but also among their populations. For example, in the case of the 2010 earthquake in Haiti, its devastating effect on the population was linked to vulnerabilities that heightened the impacts among certain groups, including children. Two years after the earthquake, “almost 30% of children aged 10 to 17 were not attending school or were dedicating only a few hours to study because they needed to contribute to household income or work at home” (Novella & Zanuso, 2018, p. 2).

1.2.1 Situation of children and adolescents in disaster contexts

Children and adolescents are a particularly vulnerable group and are disproportionately affected by disasters (UNICEF, 2023). The material, human, social, and economic losses generated by disasters threaten the continuity of education services, and in doing so, undermine a fundamental facet of the right to education: school access and retention. In 2024, the World Bank warned about the increasing frequency and intensity of disasters and their impact on children and adolescents worldwide; today, a 10-year-old student will experience three times more river floods, twice as many tropical cyclones and wildfires, four times more crop losses, and 36 times more heatwaves than a child in 1970 (Venegas Marín et al., 2024).

In this context, UNICEF introduced the Children's Climate Risk Index, which combines exposure to climate and environmental hazards, shocks, and stresses with children's vulnerability associated with: (i) health and nutrition, (ii) education, (iii) water, sanitation, and hygiene, and (iv) poverty, communication assets, and social protection. To this end, it proposes an overall score that integrates both components, as well as separate scores for exposure and vulnerability. The index aims to identify countries or areas at risk of worsening child deprivation due to climate and environmental shocks, as well as to understand the underlying factors contributing to these risks (UNICEF, 2021). Table 4 presents information for selected GPE countries.

Table 4
Children's Climate Risk Index, GPE countries

Country	Child Climate and Environmental Risk Index	Climate and Environmental Shocks Index	Child Vulnerability Index
Haiti	7.3	6.7	7.8
Guatemala	5.9	6.6	5.1
Honduras	5.5	6.5	4.3
El Salvador	5.1	6.3	3.5
Guyana	4.8	6	3.3
Nicaragua	4.6	4.6	4.5
Belize	3.8	4.9	2.6

Note: No information was available for Dominica, Grenada, Saint Vincent, and Saint Lucia, despite the fact that, as observed through other tools, these countries are highly exposed to climate-related shocks. Based on data from UNICEF (2021).

According to data in Table 4, Haiti records the highest level of child climate risk, driven by a combination of high child vulnerability (7.8) and significant climate and environmental shocks (6.7). This shows how the impacts of climate change on children are mediated by deep structural inequalities—associated with conditions of poverty, violence, inequality, and various forms of exclusion—which heighten disaster risk. Consequently, disasters disproportionately affect children and adolescents living in poverty or other contexts of vulnerability, and are further influenced by factors such as gender, ethnicity, age, disability, religion, and socioeconomic status, all of which significantly shape exposure, impact, and response capacity in relation to these events (UNDRR, 2020).

In disaster contexts, children and adolescents experience disruptions to their right to access formal education. In this regard, UNICEF (2025) has compiled data on the number of students affected by hazards, by country and by main type of hazard, as shown in Table 5 for GPE countries.

Table 5

Number of students affected by climate-related school disruptions in 2024, by GPE country and main type of climate hazard

Country	Students affected	Main climate threat
LAC region	29,986,791	No information
Guatemala	2,302,939	Storm
El Salvador	1,297,360	Storm
Honduras	79,821	Storm
Belize	89,178	Storm
Saint Lucia	30,041	Tropical cyclone
Grenada	24,981	Tropical cyclone
Saint Vincent	5,920	Tropical cyclone

Note: No information is available for Dominica, Guyana, Haiti, and Nicaragua. The regional figure represents the average of LAC countries included in the database. Based on data from UNICEF (2025).

In the region, climate-related educational disruptions are mainly driven by the combination of heatwaves, floods, storms, and cyclones. In 2024, these disruptions affected nearly 30 million students. Although not available for all GPE countries, data show that the frequency of these events remains a significant challenge for the region (UNICEF, 2025). As shown in Table 5, in the

Caribbean students were mainly affected by tropical cyclones, while in Central America educational disruptions were mostly caused by storms.

1.2.2 Disasters and education in LAC: What do we know so far?

An analysis of the situation in LAC, drawing on indicators measuring occurrence, impact, risk, and vulnerability, highlights that disasters cannot be explained solely by the intensity or frequency of hazards. Rather, their geographic and structural context must also be taken into account. In some cases, historical exposure to certain hazards creates patterns of recurrent impact, as in the case of Dominica and hurricanes. At the same time, structural factors such as poverty, educational conditions, and the presence of highly vulnerable population groups shape how the impacts of disasters—including access to education for children and adolescents—are unevenly distributed across populations. Understanding these dimensions is therefore essential for interpreting the effects of disasters on education systems and guiding responses that are sensitive to countries' geographical contexts and social conditions.

The preceding discussion has established key foundational concepts related to disasters (disasters vs. hazards, school safety, risk management, and education in emergencies) and has outlined the situation of GPE partner countries in LAC, considering variations across countries and populations. This foundation is essential for deepening understanding of the link between education and disasters, as well as for identifying countries with notable resilience responses to these events, as will be discussed below. Throughout the following discussion, the ***Education System Resilience*** approach serves as a guiding analytical framework, connecting the conceptual foundations, impact analysis, and the identification of institutional responses and practices. This approach incorporates five strategic resilience actions: strengthening anticipation, planning, response, recovery, and prevention and mitigation (Cameron et al., 2024), and is particularly relevant for examining how GPE countries in the LAC region are building and strengthening capacities to navigate and adapt to contexts of crisis and disruption.

2. Educational resilience in the face of disasters: GPE country case studies

This section presents three LAC GPE country case studies where promising practices on educational resilience in the face of disasters were identified. The countries selected were Dominica, Saint Vincent and the Grenadines, and El Salvador.

2.1 Methodology

The report adopted a policy research approach, understood as a form of research aimed at generating evidence useful for public decision-making. This approach combines the review of existing information with the analysis of concrete experiences, to identify practices and guidelines that can contribute to planning and management in the education sector (Majchrzak, 1984). Within this framework, a documentary review of laws, policies, plans, and programs related to disasters in each of the three countries was conducted. In addition, information was collected through semi-structured interviews with three types of actors: government representatives, international cooperation actors, and civil society organizations. A total of eight interviews were conducted.

The selection of the three case study countries followed three main criteria:

i. **Findings of the first AdaptED comparative report:**[8] The three countries selected stood out in Ballesteros et al. (2025) for the use of terms such as resilience, disasters, and crises in their official documents. These documents also explicitly referenced agencies, policies, plans, and institutional frameworks associated with disaster risk management and resilience.

ii. **Disaster data (occurrence, exposure, and risk):** As noted, the three countries were selected based on the high occurrence of hazards such as hurricanes, floods, and earthquakes, as well as their levels of exposure. Although these countries present relatively low scores in current risk indices, it must be remembered that the INFORM Index measures risk across three

8 This first AdaptED report contained analysis of the content of current general education laws, curriculum frameworks, and strategic education plans of the 11 partner countries of the Global Partnership for Education (GPE). It can be downloaded at the following link: https://adapted-lac.org/recurso/reportes/como-se-entiende-la-resiliencia-educativa-en-los-paises-de-america-latina-y-el-caribe/

dimensions: hazard exposure, vulnerability, and coping capacity. This means that, although a country may be exposed to hazards, its overall risk level also depends on its vulnerability and coping capacity.[9] Furthermore, these data were triangulated with other indicators with longer historical series, which show that, despite recent improvements in response capacity, these countries have historically been affected by disasters.

iii. **Documents and initiatives related to educational resilience:** Through documentary review and interviews with key stakeholders, laws, plans, policies, and programs were identified in the three countries which evidence progress in the field of educational resilience to disasters.

To provide an initial comparative overview of the case studies, Table 6 presents each country's profile in relation to the main hazards they face and the likelihood of these events occurring. It also includes information on the existing normative and institutional frameworks, as well as an overview of the resilience approach being developed in each educational context. This synthesis helps identify similarities and differences between the cases analyzed and serves as a starting point for the more detailed analysis presented for each country below.

9 For example, in the case of Nicaragua, the country shows a moderate level of hazard exposure (4 out of 10) and vulnerability (4 out of 10), but a higher likelihood of limitations in coping capacity (6.5 out of 10). This raises its average risk score to 4.9, illustrating how weaknesses in response capacity can increase overall risk, even when exposure is not particularly high.

Table 6

Comparative profile of the resilience of education systems in the face of disasters for the three case study countries

Country	Hazard occurrence	Notable resilience practices
Dominica	Main type: Hurricanes and storms Occurrence (1980 – 2024): High Risk index 2025: 2.8 out of 10	• National project: resilient country - "Build Back Better" • Reconstruction of resilient schools • Regulatory frameworks and national resilience plans • Integration of Disaster Risk Reduction into the education curriculum • Protocols and plans for educational continuity • Early warning systems and community/multisectoral coordination
Saint Vincent	Main type: Storms and floods Occurrence (1980-2024): High Risk index 2025: 3 out of 10	• Regulatory frameworks and policies on risk management and school safety • School committees and Student Emergency Response Teams (SERT) • Integration of Disaster Risk Reduction and climate change into the curriculum • Teacher training (risk management and mental health) • Use of data and information systems for decision-making
El Salvador	Main type: Storms and floods Occurrence (1980 – 2024): High Risk index 2025: 4 out of 10	• Mandatory risk management plans in all schools • School Protection Plan guidelines for prevention and response • Improvement of school infrastructure with a resilience approach • Inter-institutional coordination for risk management • Educational continuity strategies (distance education)

Note: Authors' own based on World Bank (n.d.) and European Commission, Disaster Risk Management Knowledge Centre (2025).

2.2 Dominica: Building a resilient nation from the education sector

Dominica is an Eastern Caribbean island of 290 square miles, with a population of 71,941. The main climate-related hazards the country faces include the increasing frequency and intensity of storms, including hurricanes, as well as floods, landslides, and coastal erosion (UNDP, n.d.). According to the World Bank Climate Change Knowledge Portal,[10] hurricanes accounted for 90.9% of the country's total recorded hazards over the past 40 years. It also has high exposure to tropical cyclones, with an INFORM index score of 7.8 out of 10, indicating a high level of structural exposure and significant likelihood that both the population and infrastructure will be recurrently affected (European Commission, Disaster Risk Management Knowledge Centre, 2025).

10 The platform can be accessed via the following link https://climateknowledgeportal.worldbank.org/

Dominica notably recorded the highest frequency of mentions of the terms "resilience" and "disasters" in the first AdaptED report. Three key mechanisms were then identified in relation to the country's educational resilience to disasters: the National Resilience Development Strategy, the OpenSis education information system, and efforts aimed at strengthening resilience following Hurricane Maria (Ballesteros et al., 2025).

The country has a long history of hurricane devastation; Hurricane Maria in 2017 was among the most severe, significantly affecting its physical and economic infrastructure. In the aftermath, public infrastructure was found to have been poorly designed, vulnerable, and ageing, particularly in sectors such as health, education, water, and transport (UN Women, 2021). The impact also exacerbated already limited access to services and internal displacement, including those in shelters, as well as disaster-related losses disaggregated by gender and vulnerable groups (UN Women, 2021).

In the wake of the hurricane, Dominica set out to become the world's first climate-resilient nation. This decision was based on a strategy not just of recovery, but also survival; thus, the country adopted the "build back better" approach as a guiding principle for its reconstruction and resilience efforts (UNDP, n.d.). In an interview conducted in 2025, a government representative noted that this approach:

> *"consists of rebuilding everything under better conditions: stronger and more resilient. For example, several schools are being fully reconstructed to withstand hurricanes, earthquakes, and floods, and to remain operational during and after an event. They are equipped with solar systems, generators, and water tanks"* (interview with a representative of the Ministry of Education, November 12, 2025).

Interviews with government and international cooperation representatives show that resilience is not understood as disaster prevention in Dominica, since disasters cannot be avoided, but rather as the capacity to withstand them, respond to their impacts, and recover when they occur. In the education sector, this means preparedness before an event, response during the event, and post-disaster recovery, where the priority is to resume classes as quickly as possible after an emergency. In line with this approach, Dominica has developed specific instruments, of which the three set out in Table 7 are particularly relevant.

Table 7

Main official disasters and education instruments, Dominica

Instrument	Description
Climate Resilience Act (2018)	Developed following Hurricane Maria to strengthen its capacity to withstand disasters. The Act promotes rapid recovery and reconstruction under improved conditions, as well as enhanced preparedness for future events. It also established the Climate Resilience Execution Agency for Dominica to lead these efforts.
National Resilience Development Strategy 2030 (2018)	This strategy integrates climate resilience and disaster risk management into national development planning. It seeks to strengthen infrastructure, social systems, and response capacity to climate change. It is based on sustainable development and a people-centered approach.
Dominica Climate Resilience and Recovery Plan 2020–2030 (2020)	This plan defines how to implement the national resilience strategy by setting goals, initiatives, and required resources. It identifies priorities based on their impact and cost, as well as financing gaps. It also promotes gender equality and inclusion and supports actions such as the construction of resilient schools.

Note: Authors' own based on Government of the Commonwealth of Dominica (2018a, 2018b, 2020).

Likewise, Dominica's Ministry of Education has worked to incorporate Disaster Risk Reduction into the national curriculum. This is intended to be integrated across all education levels, from early childhood to secondary education, as part of the existing curriculum rather than as a standalone subject, as stated by the Ministry of Education:

> *"It is integrated. It is integrated across all our courses. For example, at the primary level we have social studies and science. In the science curriculum, when we talk about disaster risk, we address what a disaster is, how it affects people, the country, and the region. In social studies, we analyze the social implications of disasters and how we should respond to them. We also note, for instance, that Dominica is located in the hurricane belt, so every year we face this hazard. That is why we teach children what to do to prevent disasters, how to reduce their impacts, and the best way to act"* (interview with a representative of the Ministry of Education of Dominica, November 12, 2025).

At the same time, the Office of Disaster Management has been leading efforts in education and public awareness on hazards. For example, it has developed materials in various formats, including posters, audio recordings, videos, and social media content that promote safety and preparedness actions in the face of hurricanes, floods, landslides, earthquakes, tsunamis, and volcanic eruptions

(UNDRR, 2020). Additionally, the primary school book *Prepare with Perrie Parrot: A Guide on Natural Hazards for Primary Schools* was developed for students in grades 3 to 6 (ODM, 2020).

Furthermore, the Ministry of Education has promoted teacher training in disaster risk management and first aid, along with the implementation of action protocols before, during, and after disasters. Each school requires at least one designated person responsible for emergency preparedness. In terms of infrastructure, six new schools have been built to withstand hurricanes, earthquakes, and floods, in addition to the retrofitting of existing schools. Many schools also function as shelters, equipped with generators, and in some cases solar systems, as well as water tanks and collection systems, allowing them to provide safe spaces during emergencies.

Regarding coordination between actors to strengthen the country's resilience, the Dominica Red Cross implemented Community Early Warning Systems in 2021 and 2022, with funding from USAID and support from the IFRC. The initiative aimed to improve disaster preparedness through the installation of warning systems, particularly for flood mitigation (Maurya, 2024). Developed with community participation, these systems promote the timely collection and dissemination of information to reduce impacts. Currently, various actions are being carried out in close coordination with the Meteorological Office, the Office of Disaster Management, and other actors such as the National Emergency Planning Organization, the Caribbean Disaster Emergency Management Agency (CDEMA), the OECS, and the private sector.

Similarly, the Model Safe Schools Program, launched in 2018 in collaboration with CDEMA, seeks to integrate comprehensive disaster risk management into the education sector through policies, assessment tools, and adaptable emergency plans. It was implemented in Dominica together with Antigua and Barbuda, Barbados, Saint Lucia, and Saint Vincent and the Grenadines, promoting safer and more resilient schools (CDEMA, 2018). In Dominica, the model has been strengthened through the development of School Emergency Operations Plans, which establish response protocols, responsibilities, and measures to ensure safety and educational continuity. This has also involved teacher and student training, the running of drills, and coordination with actors such as the fire service, the Red Cross, and IsraAID.

The main challenge facing the initiative is logistical and institutional, since although Dominica is a small country, many schools are located in hard-to-reach areas, meaning that support from the central government can take several hours to arrive. This is compounded by limited resources, particularly staffing constraints, which delay the full implementation of emergency operation plans across all schools. As a result, not all schools have been able to develop or consolidate these plans

at the same pace, and there has been limited comprehensive evaluation of the program (interview with a representative of the Ministry of Education of Dominica, November 12, 2025).

Furthermore, although key stakeholders interviewed recognize the importance of addressing vulnerable populations in disaster contexts and the differentiated impacts they face, no specific programs or policies targeting students with disabilities or migrant students were identified. In this context, it is noted that the ***Kalinago people***[11] continue to face stigmatization and discrimination within a broader structural context of inequality (interview with an international cooperation representative, February 4, 2026). This situation is exacerbated by the fact that their livelihoods depend heavily on healthy ecosystems: in Dominica, nearly 20% of employment is indirectly linked to forests, which are essential for tourism, agriculture, and water management. For the Indigenous Kalinago population, these resources are essential for subsistence farming and to produce traditional crafts made from larouman cane, highlighting how environmental risks can deepen pre-existing inequalities (World Bank, 2022).

In general terms, the case of Dominica shows how recurrent experience with hurricanes has led to a more explicit incorporation of resilience in public discourse and policy design. Hurricane Maria marked a turning point in the country's trajectory, consolidating climate resilience as a central pillar of its national agenda. In the education sector, this is reflected in the prioritization of resilient school infrastructure, underpinned by regulatory frameworks and sectoral actions aimed at strengthening preparedness, response, and recovery in the face of disasters, as outlined in Table 8.

11 The Kalinago population is the Indigenous community native to Dominica. It is based in the Kalinago Territory, which is composed of eight villages: Sineku, Mahaut River, Gaulette River, Salybia, Crayfish River, Bataka, Atkinson, and part of Concord. The Kalinago people have their own authorities, including a chief and a representative in the national assembly, and have managed to preserve much of their autonomy and cultural traditions compared to communities in other parts of the country. For more information, see the following link: https://kalinago.ictu.gov.dm/

Table 8

Summary of practices and developments in educational resilience in Dominica

Area	Practices and developments
School infrastructure	Infrastructure has been strengthened as a key pillar of resilience under the "build back better" approach following Hurricane Maria. This has involved the construction and retrofitting of schools designed to withstand multiple hazards, equipped with systems such as energy and water supply, and also designated as shelters. This not only improves safety but also ensures educational continuity during and after disasters.
Integration of disaster risk reduction in the curriculum	Disaster Risk Reduction is integrated transversally into the curriculum, particularly in subjects such as science and social studies. This enables students to understand hazards and develop skills to prevent and respond to disasters.
Teacher capacity-building	Teacher capacities have been strengthened through training in disaster risk management and first aid, along with the implementation of disaster response protocols, contributing to improved preparedness and response in schools.
Educational continuity	Mechanisms have been established to ensure educational continuity through response protocols, school emergency plans, and actions aimed at resuming classes as quickly as possible after a disaster.
Multisectoral and community coordination	Community-based early warning systems, led by the Red Cross in coordination with other institutions, have been implemented, improving preparedness and response to floods through active community participation.

Note: Authors' own based on documentary review and interviews with key actors from civil society and international cooperation in Dominica.

Likewise, there are initiatives that bring together national, regional, and international actors, along with certain spaces for community participation, where schools are understood as key settings for protection, educational continuity, and social stability in times of crisis. However, stakeholders also acknowledge limitations, as well as gaps in implementation and in monitoring and evaluation mechanisms. Although there is growing awareness of the differentiated impacts of disasters, the challenge remains to move toward a more systematic inclusion of vulnerable groups, particularly in relation to migration, disability, gender, and displacement, in order to strengthen genuinely inclusive resilience.

2.3 Saint Vincent and the Grenadines: Risk management and capacity strengthening

Saint Vincent and the Grenadines is a multi-island country with approximately 110,000 inhabitants, highly vulnerable to disasters such as hurricanes, floods, volcanic eruptions, droughts, and landslides, the frequency and intensity of which have increased because of climate change (Government of Saint Vincent and the Grenadines, 2025). According to the INFORM Index, the country records a risk level of 7.8 out of 10 for tropical cyclones, and its location in the Caribbean hurricane belt intensifies this risk, highlighting high levels of exposure, hazard, and vulnerability (European Commission, 2025).

This high exposure to climate hazards is compounded by structural challenges that directly affect educational continuity, particularly among the most vulnerable groups and on smaller islands outside the capital. In particular, food dependency in many of the islands increases household vulnerability to disaster-related disruptions, exacerbating food insecurity and hindering school attendance. Likewise, access to education is uneven across the country; on some islands, such as Mayreau, only primary education is available, which forces students to migrate to the main island to continue secondary education, generating high dropout rates (interview with a non-governmental organization representative, February 4, 2026). These challenges are further exacerbated by disasters, which can disrupt transportation, damage school infrastructure, and limit families' ability to support continued schooling, thereby undermining educational continuity in already fragile contexts (UNICEF, 2025).

A review of official documents and information gathered from key stakeholders from the Ministry of Education, UNICEF, and a non-governmental organization in the country, show that educational resilience in Saint Vincent and the Grenadines is in a process of consolidation. Accumulated experience in the face of disasters has shaped an understanding of resilience as a systemic capacity that requires sustained investment, technical support, and coordination among key actors. Yet, although it is observable in practice it is not always explicitly referred to as "resilience." Responses to extreme events are primarily framed through disaster risk management, humanitarian assistance, and institutional coordination. At the school level, progress is evident in preparedness, prevention, and recovery strategies, as well as in the implementation of education information systems, the development of accessible curricular resources for the education community in collaboration with organizations such as the OECS and UNICEF, and increased investment in teacher training, particularly in shock-responsive education and mental health.

Table 9 summarizes the main instruments guiding disaster-related strategies and policies in the education sector. These are interconnected; for example, the School Safety Policy is grounded in both the 2006 Act and the Comprehensive School Safety Framework 2022–2030 developed by GADRRRES which defines the three pillars incorporated into this policy.

Table 9

Key instruments on disasters and education, Saint Vincent and the Grenadines

Instrument	Description
National Emergency and Disaster Management Act (Government of Saint Vincent, 2006)	Law that establishes prevention, preparedness, response, mitigation, and recovery from hazards and disasters, coordinated by the National Emergency Management Organization.
Comprehensive Disaster Risk Management Policy (Government of Saint Vincent, 2014)	Defines objectives and guidelines to strengthen preparedness and resilience of communities and institutions in the face of climate change–related hazards and threats.
Caribbean Safe School Initiative (CDEMA, 2017, rev. 2022)	Roadmap with regional and national actions to promote school safety, including policies, strategies, and standardized evaluation. This is the regional application of the principles promoted by GADRRRES within the global Comprehensive School Safety framework.
School Safety Policy (Government of Saint Vincent and the Ministry of Education, rev. 2024)	Policy that promotes school safety through: (i) equitable access to safe learning environments; (ii) optimal use of educational resources; and (iii) contextual understanding of climate change, disaster risk reduction, and resilience.

Note: Authors' own based on Government of Saint Vincent and the Grenadines (2006, 2014, 2024), CDEMA (2022).

The School Safety Policy constitutes a key framework for educational resilience, as it promotes preparedness, response, and recovery capacities in the education system in the face of disasters. Its mechanisms and tools include school safety committees (comprising staff, students, PTA members, and others as needed) and, notably, Student Emergency Response Teams (SERTs). These student-led teams are responsible for raising awareness among peers, supporting emergency preparedness, identifying risks within schools, and promoting improvement recommendations. In addition, a training program for SERTs was implemented in 2025, involving six schools and a total of 84 primary and secondary students, including St. Mary's Roman Catholic School (16 students) and St. Vincent Grammar School (18 students).

However, the implementation of these mechanisms still faces challenges, particularly because school safety committees can sometimes be perceived as an additional burden. In response, a preventive

approach has been promoted, aimed at anticipating risks and strengthening preparedness in schools:

> *"One of the approaches we have adopted is to encourage schools to establish school safety committees, although these are sometimes perceived as an additional responsibility or burden. However, what we are emphasizing is that it is better to prevent the impact of hazards rather than adopt a purely reactive approach, that is, acting only after disasters occur. We are trying to move in this direction, instead of waiting for disasters to happen before taking action"* (interview with a representative of the Ministry of Education of Saint Vincent and the Grenadines, October 31, 2025).

In terms of multisectoral coordination, the Government of Saint Vincent and the Grenadines implements various actions in collaboration with actors such as the National Emergency Management Organization, CDEMA, the St. Vincent and the Grenadines Red Cross, the Seismic Research Centre of the University of the West Indies, UNESCO, UNICEF, and the OECS. For example, SERTs, promoted by UNESCO and adapted by the Ministry, receive support from UNICEF, while the Fire Department and the Red Cross are involved in awareness-raising and emergency preparedness activities.

Specific coordination efforts include school infrastructure repair actions and wellbeing initiatives for students and teachers implemented by UNICEF, the Ministry, CDEMA, and other regional actors. For instance, an improved school infrastructure assessment tool has been developed in collaboration with CDEMA, incorporating criteria on sustainability, climate preparedness, and disaster risk management. However, its implementation faces certain challenges, as it requires specialized technical knowledge. A single assessment can take approximately four hours, depending on the size of the school, and requires specialist technical profiles that are not always available, while also being constrained by limited resources. Therefore, implementation cannot rely solely on individual schools but requires a national-level approach.

Other relevant initiatives include the Volcano Ready project, aimed at reducing vulnerability in the multi-hazard environment of La Soufrière volcano through early warning systems, adaptation, and community capacity strengthening. Likewise, the Emergency Resilient Recovery Project set up following Hurricane Beryl (2024) seeks to provide immediate financial support, reactivate economic activity, and rebuild critical infrastructure and services in a resilient manner.

Finally, Saint Vincent and the Grenadines has made significant progress within the education sector through the implementation of a disaster risk reduction and climate change curriculum. The initiative began in 2019 with World Bank funding and, following the establishment of a School Safety Unit, led to the development of an initial curriculum draft in 2020. Although implementation was planned for that year, the COVID-19 pandemic meant the process had to be adjusted. Subsequently, in coordination with UNICEF and other partners, teacher training was strengthened to support its development as a cross-cutting approach. In addition, the curriculum promotes a gradual understanding of risk management across three levels (family, school, and community), and is integrated into different subjects and adapted to various educational levels:

> *"The curriculum has been designed to be flexible and integrated into different subject areas, which is reflected in the teaching guides shared with teachers during training sessions [...] Each level has a progressive focus: in the first year, for example, it covers family emergency plans; in the second year, school emergency plans; and in the third year, community or national-level plans. Likewise, the curriculum is adaptable: it can be used in upper secondary levels (fourth and fifth year), as well as in early childhood education, primary education, and even community settings"* (interview with a representative of the Ministry of Education of Saint Vincent and the Grenadines, October 31, 2025).

Table 10 presents a summary of the initiatives identified, organized into four key areas identified as central to disaster resilience in the country.

Table 10

Practices and developments in educational resilience, Saint Vincent and the Grenadines

Area	Practices and developments
School safety	Implementation of the School Safety Policy and the establishment of committees and Student Emergency Response Teams (SERTs). These mechanisms strengthen preparedness and the participation of the education community in the face of disasters. However, their implementation still faces challenges related to school-level ownership and uptake.
Integration of disaster risk reduction in the curriculum	Disaster Risk Reduction is integrated transversally into the school curriculum. This helps strengthen students' capacities to respond to emergencies. Its implementation is supported by teacher training.
Strengthening of teacher capacities	Progress has been made in strengthening teacher capacities, particularly in shock-responsive education and mental health, in coordination with actors such as UNICEF. This training aims to improve teachers' preparedness to respond in crisis contexts.
Education information systems and data use for education management	Education Management Information Systems have been implemented to strengthen planning and emergency response, for example through monitoring school closures and impacts after disasters. This enables better decision-making in crisis contexts. However, challenges remain in timely data collection and effective use of information.

Note: Authors' own based on documentary review and interviews with key actors from civil society and international cooperation in Saint Vincent and the Grenadines.

Despite significant progress in resilience, an international cooperation representative noted in interview that the main challenges for strengthening the resilience of education systems in the face of shocks center on four key areas. First, the breadth and complexity of the required components—such as infrastructure, curriculum, teacher training, mental health, and financing—make comprehensive implementation difficult. Second, challenges related to local ownership persist, as many initiatives are still perceived as being driven by international organizations and are not yet fully institutionalized at the national level. Third, the sustainability and timeliness of interventions are limited by short-term, project-based financing schemes, which make it difficult to consolidate structural changes. Finally, there are challenges relating to coordination and institutional clarity due to the combination of a multiplicity of frameworks and actors with capacity constraints such as data collection, which can lead to fragmentation and undermine effective implementation (interview with a representative of international cooperation, February 4, 2026).

As a highly disaster-exposed country, Saint Vincent and the Grenadines has been compelled to continuously adapt its education system. In recent years, there have been concrete developments in regulations, programs, and training aimed at ensuring schools can prepare for, respond to, and

recover from crises. However, these developments still depend partly on external support and require greater alignment between frameworks and institutions. Educational resilience in the country is increasingly visible but still under construction, grounded in lessons learned from past events and recent institutional developments. Nevertheless, structural challenges remain that must be identified and addressed in order to strengthen resilient processes and systems.

2.4 El Salvador: Infrastructure, planning, and disaster response reforms

El Salvador—the only of the case studies to be located in Central America—is also highly exposed to disasters. Among the main hazards recorded between 1980 and 2024 are storms (31.4%) and floods (25.7%), followed by epidemics (14.3%), earthquakes (11.4%), and droughts (8.6%) (World Bank, n.d.). Documentary review and interviews with key stakeholders in the country confirm that the most relevant current risks are storms, heavy rainfall, and landslides, which affect school infrastructure, access, and educational continuity. In addition, the education system in El Salvador faces structural challenges, such as low secondary school enrolment, a low likelihood of progression to higher education, and high levels of school dropout, particularly among boys at the secondary level. Geographical, socioeconomic, and disability-related disparities also persist.

The Salvadoran education system is currently in a period of transition in terms of institutional reform. Specifically, comprehensive education reform has been announced, which includes renewal of the existing curriculum, in place since 1998, the implementation of new study programs due to start in 2026, a possible extension of the school day, and amendments to key laws such as the General Education Law, the Teacher Career Law, and the Higher Education Law. Although these changes are not yet reflected in official policy documents, as the process is still underway, they provide an insight into the government's emerging approach and future directions regarding disaster resilience (interview with civil society organization representative, January 12, 2026).

Actors responsible for disaster and education-related practices include the Ministry of Education of El Salvador, the General Directorate of Civil Protection, Disaster Prevention and Mitigation, the Salvadoran Red Cross, the Coordination Center for the Prevention of Natural Disasters in Central America, and the Inter-American Development Bank (IDB). There is also inter-ministerial collaboration between the Ministry of Environment and Natural Resources and the Ministry of Public Works.

In addition, the country has a set of policy instruments that shape disaster response, the most significant of which are presented in Table 11.

Table 11

Key policy instruments relating to disasters and education, El Salvador

Instrument	Description
Civil Protection, Disaster Prevention and Mitigation Law (Amendment, 2024)	Law aimed at preventing, mitigating, and effectively responding to disasters, ensuring the protection of life, physical integrity, and public and private assets through the Civil Protection system.
National Civil Protection, Disaster Prevention and Mitigation Plan (2024)	Establishes the strategic vision for disaster risk management and protection, providing general guidelines and institutional coordination. This plan forms the basis of the National Disaster Risk Reduction Plan, which guides practical implementation through specific procedures and mechanisms.
Guidelines for Developing the School Protection Plan for Integrated Disaster Risk Management (2023)	Tool that guides educational institutions in disaster prevention, mitigation, preparedness, and response, based on Integrated Disaster Risk Management. This approach includes four areas: risk analysis, risk reduction, management of adverse events, and recovery.
National Disaster Risk Reduction Plan (2024)	Guides the practical implementation of risk management through procedures and institutional coordination. It seeks to strengthen knowledge, resilience, and disaster response. It also includes educational actions to raise awareness of risks.

Note: Authors' own based on General Directorate of Civil Protection, Prevention and Disaster Mitigation (2024a, 2024b, 2024c), Ministry of Education, Science and Technology (2023).

Educational resilience in El Salvador is primarily understood as the system's capacity to respond to and ensure educational continuity in the face of recurrent emergencies. There is an emphasis on school infrastructure, institutional coordination, and the resumption of classes using alternative spaces or distance learning modalities. This approach is reflected in practices and policies linked to disaster risk management, prevention, and the protection of children and youth. In addition, the country has had school-based integrated risk management plans in place since 2012, which have strengthened a culture of drills and disaster preparedness:

> *"For several years now, all schools have been required to have principals and their teaching teams develop integrated risk management plans. As a result, all schools have these plans and know whether they are more exposed to floods, landslides, earthquakes, or whether they are near a volcano. […] Some seismic risk mitigation plans for school infrastructure have also been developed, which I believe*

> *are currently being revived. […] In addition, new schools have been built with new infrastructure standards, including risk considerations, water quality, electricity, and even connectivity, although the scope of the latter is still limited"* (interview with civil society organization representative, January 12, 2026).

One of the main developments at the school level has been the creation of the Guidelines for Developing the School Protection Plan by the Ministry of Education. These guide schools in prevention, mitigation, preparedness, and response actions in the face of emergencies or disasters, and are based on Integrated Disaster Risk Management, defined as a planned process for the timely identification of various risks that may affect communities (Ministry of Education, 2023). Alongside this, the Ministry has in place the Climate Change Education and Integrated Risk Management Plan, which establishes the institutional approach to strengthening national resilience and reducing vulnerability. This instrument recognizes the interconnection between climate change, risk management, and education as long-term processes, emphasizing the need to generate synergies from a systemic approach (Ministry of Education, 2012).

In addition, the Technical Roundtable on Disaster Risk Reduction for the Right to Education has been in operation since 2020. This forum has contributed to the process of updating the School Protection Plan, incorporating input from students, principals, teachers, and parents, as well as technical teams from different national directorates and Ministry of Education staff.

In terms of infrastructure, the My New School program, launched in 2023, is actively working to strengthen schools against disaster impacts. As part of this initiative, the Ministry of Public Works presented a plan to rebuild 164 public schools with a budget of 16 million US dollars, funded by the World Bank and assigned to the Ministry of Education (Ministry of Education, Science and Technology, 2023). Similarly, the government's flagship Two Schools per Day program, launched in May 2025, is a key part of the strategy to transform educational infrastructure. Through this initiative, the government has upgraded 460 schools nationwide, aiming to ultimately renovate more than 5,100 public schools across the country. The works are aimed at improving physical conditions, safety, and equipment, thereby strengthening the learning environment (Rodas, 2025).

Based on the above and the progress highlighted by interviewees, Table 12 presents the main practices and developments relating to strengthening the education system in the face of disasters, organized into five key areas.

Table 12
Practices and developments in educational resilience, El Salvador

Area	Practices and developments
School infrastructure	The Ministry of Education is developing new school infrastructure standards that include earthquake resistance, preparedness, sustainability, water, energy, and connectivity, with support from the World Bank and the IDB.
Financing and cooperation	The IDB finances early childhood programs and climate change adaptation projects. The GPE complements these actions, although some components show low levels of implementation.
Governance and coordination	A Technical Roundtable for Educational Continuity was established (Ministry of Education and 35 organizations), with annual review of action plans and terms of reference, monthly meetings, and intersectoral coordination. It includes an active education cluster, with coordination escalated to higher levels during emergencies. The Ministry of Environment operates early warning systems (radars and seismic notification systems).
Educational continuity and digitalization	Emergency declarations during heavy rainfall events and the use of tablets, laptops, radio, and Google Classroom. Only one full school closure day was recorded in 2023. Connectivity gaps affecting vulnerable populations have been identified, and the government is exploring alternative technologies.
Integrated education risk management	Since 2012, mandatory school-based risk management plans have been implemented in all schools, including hazard identification, drills, and defined responsibilities, consolidating a widely internalized institutional response culture.

Note: Authors' own based on documentary review and interviews with key actors from civil society and international cooperation in El Salvador.

As in Dominica and Saint Vincent and the Grenadines, disaster impacts in El Salvador are unevenly distributed, affecting vulnerable populations more severely. Socioeconomic, geographical, and economic productivity inequalities shape both risk exposure and recovery capacity, with differentiated impacts across communities and education systems. Civil society and international cooperation representatives noted in interview that low-income households are often located in high-risk areas such as on slopes and riverbanks, and in precarious housing, while new middle-class urban developments also face vulnerabilities linked to poor urban planning. In the eastern region, drought affects agricultural production, generating food insecurity, poverty, and migration. Child malnutrition remains a problem even outside drought-affected areas, linked to unequal access to land—conditions that directly affect school attendance and learning outcomes for children.

In sum, El Salvador shows progress in mainstreaming disaster risk management into the education system, particularly through the early adoption of mandatory risk management plans in all schools,

updates to the School Protection Plan Guidelines, intersectoral coordination through technical working groups, and sustained investment in infrastructure, positioning the country as a regional reference point for educational preparedness and disaster response. Together, these actions drive prevention efforts and promote educational continuity during emergencies.

However, challenges remain in reducing the structural inequalities that shape risk exposure and educational trajectories among the most vulnerable populations. In this sense, the policy response to educational resilience in El Salvador is in transition: from a focus on response and infrastructure toward a more comprehensive approach addressing equality, climate adaptation, and long-term sustainability.

2.5 Regional construction of educational resilience: Frameworks, actors, and initiatives

The case studies of the three GPE partner countries, the interviews with key stakeholders, and the literature review together reveal that progress in educational resilience in LAC does not develop in isolation, but rather as part of a broader regional process. Various actors, including government representatives, civil society organizations, and multilateral agencies, highlighted the existence of frameworks, networks, and initiatives that guide and support responses at the national level. The Comprehensive School Safety Framework 2022–2030, CDEMA, and the Climate Smart Education Systems Initiative (CSESI) are particularly notable. While these frameworks and initiatives extend beyond the cases analyzed, and countries show varying levels of progress, together they contribute to building regional coherence and coordination around disaster risk management and educational resilience.

Regional initiatives highlight the role of multilateral organizations in building education sector responses to disasters, primarily through the development of frameworks, capacity-building, and the promotion of common approaches. In particular, the GADRRRES Comprehensive School Safety Framework brings this approach into practice through risk anticipation, promoting safe infrastructure that reduces risks, as well as through recovery and adaptation via psychosocial support for students and education stakeholders (see Annex 1). Meanwhile, CDEMA strengthens capacities through early warning systems and risk mitigation strategies in countries across the region (Annex 2). CSESI promotes a resilience framework, supports the strengthening of education systems to adapt to climate change, and incorporates sustainability as a cross-cutting pillar (see

Annex 3). These initiatives do not operate in isolation but rather together guide and shape the responses that countries develop in the face of disasters.

In addition, beyond these three examples, other relevant frameworks, agencies, and initiatives in the region were frequently mentioned by key stakeholders as part of broader efforts that contribute to strengthening educational resilience (see Annex 4). These initiatives show how regional cooperation focuses on developing capacities for anticipation, planning, prevention, mitigation, response, and recovery from crises, through concrete tools such as guidelines for identifying and preventing adverse disaster impacts, climate education initiatives, and improvements in connectivity in emergency contexts. More broadly, regional cooperation not only supports countries during crisis situations but also helps shape the approaches and mechanisms through which they organize their educational responses to disasters.

3 Disaster education: How do disasters affect education systems?

This report has sought to emphasize the link between disasters, education, and resilience, specifically from a LAC perspective. Within this framework, disasters are understood both as the result of the interaction between hazards and pre-existing conditions of vulnerability, and in terms of their multiple impacts on education systems in the region. In response, national strategies have tended to focus on strengthening capacities, which is one of the pillars of the educational resilience approach.

The findings from the case studies show a strong emphasis on recovery and continuity of educational services after disasters, as well as on capacity-building aimed at prevention, anticipation, and risk mitigation. One example is Dominica, where school infrastructure is being rebuilt using a climate resilience approach, with the aim of better preparing the education system for future hazards. Likewise, both Dominica and Saint Vincent and the Grenadines have made progress in integrating disaster risk reduction and climate change content into the curriculum, while the latter has also advanced in the implementation of school safety committees.

The report argues that strengthening the capacities of education systems also requires a deeper understanding of the effects of disasters. In other words, it is not only about responding, but also about recognizing how these events differentially impact students and their educational trajectories. As noted, risk is determined by exposure, vulnerability, and coping capacities, which vary across space and population groups.

In this context, disasters can produce both immediate effects related to the provision of education services, and broader social and economic consequences that shape students' trajectories. The case studies also suggest that countries' past experiences have been key to understanding these impacts and guiding the development of specific capacities for improved risk management. For example, following Hurricane Maria in Dominica, weaknesses were identified in school infrastructure and the provision of basic services, prompting a response focused on strengthening both. This process has not only aimed to improve the physical conditions of the education system, but also to promote greater awareness of the educational and social impacts of disasters among students themselves. In addition, differentiated impacts have been noted among certain Indigenous groups, such as the Kalinago population, highlighting the relationship between disasters, food insecurity, and livelihoods.

In the case of Saint Vincent and the Grenadines, there is also evidence of the interaction between the country's high exposure to disasters and pre-existing structural challenges, such as limited access to educational opportunities on some islands, which contributes to deepening cycles of vulnerability. These effects have been addressed through a school safety approach, with an emphasis on training in disaster risk management to strengthen anticipation and response. Student participation in these initiatives is also promoted, aimed at developing a comprehensive understanding of risk. This perspective also highlights that the effects of disasters are not limited to the education sector but also extend to the community and national levels.

Meanwhile, in El Salvador, there have been efforts to address the link between disasters and structural challenges such as poverty, food insecurity, and migration. Initiatives such as My New School and Two Schools a Day represent attempts to mitigate these effects through strengthening the educational infrastructure.

Taken together, these elements provide a more comprehensive picture of how disasters affect education systems. The progress observed in the case study countries offers relevant insights into which effects are being addressed and how. However, the regional literature review shows that there are still limited studies that systematically analyze these effects or assess their implications for the education sector.

Building on this, the report adopts the distinction proposed by Venegas et al. (2024) between the direct and indirect effects of disasters on education. This distinction is underdeveloped in the regional literature, but it is key for deepening the analysis and allowing the development of more comprehensive educational resilience strategies, as well as policies and emergency plans that ensure learning continuity and protect the right to education of children and adolescents in the face of the growing threat of climate-related disasters. This is explored in greater detail in the following two sections.

3.1 Direct effects

In the specialized literature, direct effects are defined as the immediate outcomes of the destruction caused by an event (Ignacio & London, 2021, p. 15). In line with this approach in relation to the education sector, the term refers to the interaction between hazards (droughts, extreme temperatures, tropical cyclones, floods, etc.) and their direct impact on the provision of education services, particularly by creating non-conducive learning environments, causing the destruction

or temporary closure of schools, and reducing access to quality education services (Venegas et al., 2024).

(a) Damage to school infrastructure: Environments that do not support learning

Disasters can disrupt education services through damage to infrastructure; this includes classroom collapse, disruption of water and sanitation services, power outages, and the loss of teaching materials, all of which undermine the availability of safe learning spaces for students (Venegas et al., 2024; UNESCO, 2024). In addition, in many countries interruptions occur because school facilities are used as temporary shelters during emergencies; this means that students cannot continue learning in their classrooms, and as a result classes are suspended or shift from in-person to remote modalities (UNICEF, 2021).

The 2024 Comprehensive School Safety Policy Survey conducted by GADRRRES provides useful information on infrastructure and disasters. GPE countries participating in the initiative include Belize, Dominica, El Salvador, Guatemala, Honduras, Saint Lucia, and Saint Vincent and the Grenadines. Key findings include that 75% of governments reported damage that year to school infrastructure caused by strong winds and earthquakes. Additionally, 34% reported that earthquakes had led to deaths in schools, making this the disaster most associated with fatalities in school settings (Paci-Green et al., 2024, p. 89).

The 2020 hurricane season, which affected five GPE countries—Guatemala, Honduras, Nicaragua, Belize, and El Salvador—is a clear example of the impact of disasters on infrastructure. In Honduras, tropical storms Eta and Iota damaged 534 schools, with an additional 620 used as temporary shelters (IDB & ECLAC, 2021). In addition, they caused flooding that damaged classroom walls and roofs, led to water leakage, and caused the deterioration of computers, books, and desks. Landslides were also reported, affecting sanitation services, power outlets, and electrical wiring (IDB & ECLAC, 2021, pp. 22–23). Of the additional costs generated by the hurricanes for the Honduran government, 40%—approximately USD 549,065,133—were directly related to school repairs, debris removal, and demolition, (IDB & ECLAC, 2021, p. 13).

As also highlighted in the previous AdaptED report (Ballesteros et al., 2025), educational infrastructure is particularly vulnerable in hazard-prone contexts with pre-existing structural inequalities. This has led many GPE countries to focus attention on this issue, which—in line with the literature on the topic—identifies infrastructure as one of the most significant direct effects on

the education sector. Educational resilience includes the dimension of resilient structures, meaning that the capacity of education systems is also built and sustained through norms, regulations, policies, and infrastructure. This latter element is highly affected during disruptions or crises caused by disasters, requiring priority attention to ensure its resistance and adaptability.

(b) Temporary closures: The use of schools as shelters

In addition to damage to educational infrastructure, school environments are also affected by temporary closures due to schools being used as shelters during emergencies. According to Kawasaki et al. (2022, p. 2), "since schools are the center of the community and provide a safe environment for children to study, they become evacuation shelters for local residents in the event of disasters." Factors leading to schools being used as shelters include housing loss, the need for protection from secondary disaster impacts, and the provision of basic supplies in these spaces. However, since schools are institutions designed for educational purposes, they are likely to face multiple challenges when used as shelters.

According to GADRRRES (2025), 64% of countries in the region report having policies and/or procedures for the use of schools as shelters in emergency situations. However, only 13% report having procedures that require the state to reimburse or compensate schools for damages or costs associated with their use as post-disaster shelters.

When reviewing national regulatory frameworks in GPE countries on this topic, Nicaragua for example has a legal framework that authorizes the Ministry of Education to act as the enabler and administrator of these spaces (UNICEF, 2007). In El Salvador, the Regulation for the Use of School Centers establishes rules for the use and protection of school assets while functioning as shelters (UNICEF, 2007). It should be noted that this is 2007 data, and there is a need for updated analysis of more recent regulatory developments. More recent documented developments in El Salvador include the My New School program,[12] which focuses on the planning, design, and construction of school infrastructure aimed at creating modern and inclusive learning environments that support student learning and development (Ministry of Education, 2022).

In the Caribbean, OECS countries are particularly exposed to hurricanes and storms. In 2017, Dominica was hit by Hurricane Maria, which intensified rapidly from Category 1 to Category 5

12 The Government of El Salvador is promoting changes to the My New School program aimed at incorporating new proposals into the education system; however, these have not yet been officially published.

(Parham, 2022). The disaster caused structural damage to schools, yet they were still used as shelters due to the widespread destruction on the island. School principals reported looting and/or structural failures, which limited the resumption of normal activities. At the time, disruptions in telecommunications prevented online learning in some communities, deepening educational inequalities. Subsequently, the return to school was gradual and, in many cases, operations continued at reduced capacity (Parham, 2022).

Although in Dominica the Plan to Reduce the Vulnerability of School Buildings to Natural Disasters had been in place since 1998, it was only after Hurricane Maria in 2019 that the first version of the *Emergency Shelter Management Manual* was implemented. This promotes an understanding of effective emergency shelter management by providing practical tools and protocols to plan, implement, and supervise emergency shelters, many of which are located in schools (Office of Disaster Management, 2019).

These developments are important for educational resilience, as reviewing and implementing policies and procedures on how schools are used during disasters and emergencies can reduce impacts while also enabling schools to continue supporting community evacuation and temporary shelter needs (Save the Children, 2017).

3.2 Indirect effects

The indirect effects of disasters do not occur immediately or visibly, unlike material damage or direct disruptions to learning environments. Instead, they develop through a chain of consequences that, although extending beyond the education sector, ultimately have a significant impact on education. Factors such as food insecurity, family or community conflicts, and economic losses affect the right to education of children and adolescents, indirectly shaping their educational trajectories (Venegas et al., 2024). To better understand this dynamic, data will be presented on the main social, economic, and human consequences that tend to disrupt education systems and affect attendance, performance, learning, and school continuity.

(a) Consequences of disasters associated with the education system

Research and interviews with experts highlighted the notion of interconnected risks, in which disruptions cascade and intensify through their social, economic, and environmental impacts. In

disaster contexts, children and adolescents face particular conditions of vulnerability associated both with family and community dynamics (such as separation from family members, loss of loved ones, increased stress, and forced displacement) and with structural factors (including poverty and limited access to basic services). In addition, the psychological and educational impacts derived from these events can compromise their well-being and development in both the short and long term (OCHA & UNDRR, 2022).

Based on a literature review, Table 13 systematizes how disasters affect multiple social and economic dimensions of children's and adolescents' lives, and the impact of this on their education. These impacts relate not only to educational access and retention, but also to differentiated learning losses across populations, which will be addressed in the following section. It is important to note that the impacts described do not occur in isolation but are interrelated and may reinforce one another.

Table 13

Multidimensional impact of disasters on children and adolescents and their education

Dimensions	How disasters affect the lives of children and adolescents
Living conditions	• Deaths, injuries, and other physical impacts • Compromised transportation • Loss of homes and limited access to basic services • Material damage to schools
Economic shocks	• Reduction of household wealth impacts educational pathways, manifested as: (a) increased domestic and caregiving responsibilities, limiting the time available for school activities; (b) early entry of children and adolescents into child labor as a strategy to compensate for reduced family income, increasing the risk of school interruption or dropout.
Food insecurity	• Impact on food production and access, which affects the nutrition levels of children and, consequently, can negatively impact learning and educational outcomes.
Mental health	• Stress and trauma in children, exacerbated by family stress, affecting their mental health, physical well-being, and school performance. For example, extreme heat worsens students' emotional well-being and learning. • Emergence of new forms of anxiety or stress, such as eco-anxiety.
Migration and displacement	• Disruption of educational pathways, family separation, and exposure to unstable or unsafe environments. • Problems with and/or lack of required documentation.
Violence and risk factors	• Increase in violence against children: for example, physical and emotional abuse at home or in the community, child labor exploitation.
Gender equity	• Greater exposure of girls and adolescent girls to gender-based violence, early marriage, and sexual exploitation. • Overload of caregiving responsibilities.

Note: Within this framework, poverty emerges as a cross-cutting factor that intensifies the effects of disasters on living conditions, food security, mental health, exposure to violence, and educational trajectories, deepening pre-existing inequalities. Authors' own based on Hussain & Mukhopadhyay (2024), Wang (2024, p. 7), UNICEF (2021, p. 110), Kousky (2016), Lai & La Greca (2020), Cerna-Turoff et al. (2021), IDB (2025), and Venegas Marín et al. (2024).

3.3 Educational response: The shift toward distance education

To prevent or reduce school disruptions caused by this type of shock, education systems have developed various responses aimed at ensuring the continuity of education services, particularly through the adoption of alternative modes of teaching. Although it is not a disaster, the COVID-19 pandemic provides a clear example of how the limitations of education systems in addressing large-scale disruptions can affect both the provision and modalities of education. In that specific context, marked by the prolonged suspension of in-person classes, virtual or remote learning became the

main alternative for ensuring continuity of learning, highlighting its role as a response mechanism in situations of disruption (UNICEF, 2021).

During the pandemic, LAC stood out as one of the regions where educational institutions remained closed for the longest period. These closures had differentiated impacts across populations:

> *"during the suspension of in-person classes, millions of students were excluded from education and many others had insufficient engagement with learning, resulting in learning loss, increased inequalities, and negative effects on the health and psychosocial well-being of students and teachers, with younger children and those from more vulnerable groups experiencing the greatest losses"* (UNESCO, 2024, p. 9).

Yet, this global crisis also set a precedent for countries in the region to implement or strengthen various distance education strategies, referring to educational approaches where there is a separation in time and space between teachers and students (INEE, 2022, p. 13). These may include the use of digital platforms, television, radio, and printed materials, with varying levels of preparedness and coverage. Virtual education represents a specific modality based on the use of the internet and digital technologies (Barrientos et al., 2022). However, as noted by several organizations, significant gaps persist: not all students have access to the internet or adequate devices, which creates barriers to benefiting from these tools, and many teachers have not received sufficient training to work with digital content or new methodologies (González Motos & Bonal Sarró, 2023).

In disaster contexts, such challenges are compounded by damage to school infrastructure which not only leads to interruptions to in-person education, but also often reduces the effectiveness of responses such as distance learning through digital tools when electricity and connectivity are disrupted. Hurricane Maria (2017) in Puerto Rico, for example, caused severe damage to educational infrastructure and basic services, leading to prolonged school closures and affecting both educational continuity and childcare for many families (Vargas-Díaz & Zambrana-Ortiz, 2019; Cardoza, 2018), and also reducing capacity to provide alternatives. While distance learning can serve as a useful alternative in the face of certain disruptions, including for example during the COVID-19 pandemic when a range of measures were implemented to sustain education, many of these remain insufficient in the face of climate-related disasters, particularly when electricity and connectivity are disrupted, reducing the effectiveness of responses based solely on digital tools.

4 Key findings and final reflections

This report aimed to explore the link between disasters and education from an educational resilience perspective, examining how education systems in GPE LAC countries build capacity to withstand disruptions and develop practices to respond to them.

First, evidence shows that ***climate change*** has intensified the frequency and severity of extreme events such as droughts, wildfires, and extreme temperatures, disproportionately affecting low-income countries and vulnerable populations (Nusche et al., 2024). In the LAC context, between 2000 and 2019, a higher percentage of climate-related events was recorded compared to previous decades, with impacts that not only threaten human life and material assets but also disrupt students' educational continuity. GPE countries in the region show high exposure to storms, floods, and earthquakes, as well as droughts, epidemics, and extreme temperatures (CEPAL, 2022; Eckstein et al., 2021; World Bank, n.d.).

The study acknowledges conceptual advances in the definition of disasters, drawing on revisions and proposals from various multisectoral and international organizations such as UNESCO, OCHA, UNDRR, UNDP, and GADRRRES, among others. In this way, disasters are understood as the interaction between hazards and pre-existing vulnerability conditions that affect populations and result in varying degrees of exposure and risk within a given geographical context (Cecchini et al., 2021; UNDRR & OCHA, 2022). Likewise, concepts such as ***school safety, disaster risk management, and education in emergencies*** are closely linked to the notion of educational resilience. These approaches, promoted by international organizations, reflect efforts to strengthen the capacity of education systems to prevent, respond to, and recover from crisis situations.

The main findings of this report derive from data collection and analysis conducted for three case study GPE countries: Dominica, Saint Vincent and the Grenadines, and El Salvador. The comparative analysis shows that in all three countries ***educational resilience*** has developed in response to disaster experiences which then forced education systems to reorganize and strengthen their response capacity. While multiple events have occurred, several of the most recent ones served as turning points that reshaped priorities, accelerated reforms, and triggered investments in the education sector. Hurricane Maria in Dominica, the eruption of La Soufrière and hurricanes in Saint Vincent and the Grenadines, and the recurrence of storms, earthquakes, and heavy rainfall in El Salvador exposed infrastructure fragility and the need to strengthen coping capacities. In this context,

strengthening school infrastructure emerged as a key pillar for Education System Resilience, whether through reconstruction based on improved standards, multi-hazard adaptation, or the renovation of educational facilities.

At the same time, in all three cases, ***resilience*** is predominantly understood as the system's capacity to prepare, respond, and ensure educational continuity as quickly as possible. The institutionalization of disaster risk management plans, the sustained practice of drills, and intersectoral coordination reflect an increasingly consolidated culture of preparedness. Schools thus take on a role that goes beyond the pedagogical, becoming spaces of shelter, coordination, and community stability in times of crisis. Similarly, the cases converge in recognizing that disasters exacerbate pre-existing inequalities, disproportionately affecting low-income households, those in high-risk areas, and vulnerable populations, including those affected by migration, disability, or food insecurity. Although this perspective appears explicitly in discourse, a key challenge remains translating this recognition into education policies that integrate equity as a central component of resilience.

In this regard, the integration of disaster risk reduction ***into the curriculum*** is one of the most significant developments highlighted in the report. In Dominica and Saint Vincent and the Grenadines, there is a shift toward approaches in which Disaster Risk Reduction and climate change are conceived as cross-cutting competencies embedded throughout the educational process, integrated across subjects and levels rather than presented as fragmented or isolated content. These developments also show that effective curriculum integration depends not only on formal design but also largely on teachers' pedagogical capacities and their command of the content. In this sense, in Saint Vincent and the Grenadines it was found that curriculum implementation required improved teacher training, while regional initiatives such as CSESI highlight teaching practice as the key space where resilience-related content materializes in classrooms.

Finally, promising curricular practices show that ***learning pathways*** gradually build in complexity, and are articulated across different levels of action. This means that content is organized in a progressive manner, moving from the family sphere to the school and community levels, starting from students' immediate experiences and expanding toward more complex contexts.

In terms of differences between countries, it is important to highlight the various ways in which educational resilience is incorporated into the public agenda. In ***Dominica***, resilience is framed as an explicitly national project, linked to a climate adaptation and post-Hurricane Maria reconstruction approach, and integrated into legal and strategic frameworks. Of the three cases, it is here that the concept has most prominence in the political agenda and the most comprehensive implementation

within the system. In contrast, in ***Saint Vincent and the Grenadines***, resilience is mainly developed through disaster risk management and school safety, with significant progress in participation and curriculum, but with greater challenges in articulating frameworks and initiatives.

El Salvador demonstrates a more institutional and regulatory approach, marked by the early adoption of mandatory disaster risk management plans, intersectoral coordination, and strong investment in infrastructure within the context of ongoing reforms. Additionally, resilience is primarily oriented toward immediate response and the continuity of educational services, while its implementation as a long-term strategy still lacks clearly defined guidelines.

In addition, educational resilience to disasters in LAC is built regionally rather than in isolation. ***Regional cooperation*** plays a key role by providing frameworks, strengthening technical capacities, and promoting shared approaches that guide and shape national education policy responses to disasters. However, there remains a need to strengthen the exchange of experiences between countries, build common agreements, and, above all, define priorities aligned with national contexts.

The case studies show that strengthening capacities, both at the individual and systemic levels, requires each country's specific context to be taken into account. In this regard, it is crucial to develop a deeper contextual analysis of factors such as historical and cultural context, language, educational system characteristics and challenges, and structural conditions, in order to better understand how these shape the way resilience is conceived and implemented. This is key, since conceptual and policy developments must respond to local and regional dynamics that allow knowledge to be adapted and mobilized more effectively (Aydos et al., 2025).

The discussion of ***direct and indirect effects*** shows that disasters impact education systems across multiple dimensions, levels, and timeframes—an understanding that could help improve the focus and scope of current initiatives. While damage to infrastructure and school closures are the most visible and immediate manifestations, indirect effects—such as income loss, food insecurity, and forced migration—have deeper and more prolonged impacts on educational trajectories. In El Salvador, for example, it is recognized that droughts and heavy rainfall affect agricultural production, generating food insecurity and economic pressure on households, which directly influences school retention. Similarly, in Saint Vincent and the Grenadines, food dependency and inequalities between islands shape families' recovery capacity and, consequently, the educational continuity of children and adolescents.

Furthermore, this shows that educational resilience cannot be reduced to physical reconstruction or the reopening of schools. While strengthening infrastructure and response protocols is essential—and significant progress has been made in this regard—indirect effects highlight that resilience also depends on ***protecting educational trajectories*** (including ensuring education quality, timely completion of schooling, and equitable learning outcomes) from the economic and social shocks caused by disasters. Therefore, to move toward a more comprehensive form of resilience requires education policies to be aligned with social protection mechanisms, targeted strategies for vulnerable populations, and measures aimed at reducing structural inequalities that heighten the impact of disasters.

Finally, the report has invited reflection on ***distance education*** as an alternative aimed at ensuring learning continuity in the face of various disruptions. Its implementation in disaster contexts shows that the most vulnerable groups—who are already exposed to higher levels of risk—do not necessarily benefit. On the contrary, such modalities may deepen existing gaps, due to limitations in connectivity, internet access, and availability of technological tools, limiting the extent to which this approach can be equally effective for all. Moreover, for the student population in general, it can also pose challenges, especially when hazards disrupt access to these services.

In this context, the following section presents recommendations aimed at strengthening educational resilience through public policy and institutional action.

5 Policy recommendations

The policy recommendations derive from the study's findings and are organized across three levels: system, institutional, and school. The system level refers to policy frameworks, governance, and coordination mechanisms that guide the education sector's response to disasters. The institutional level addresses the internal capacities of the education sector to implement these policies, including planning and preparedness for emergencies, teacher training, and mechanisms for monitoring and supporting students in vulnerable situations. Finally, the school level focuses on curriculum, teaching and learning processes, and strategies to sustain learning and student well-being in disaster contexts.

5.1 System level: Governance and policy frameworks

(a) Promising practices in disaster and education action begin with a comprehensive understanding of the problem, which is then translated into interconnected regulations and programs.

In the three cases analyzed, different regulatory frameworks guide actions in the education sector. Key references include the National Resilience Development Strategy 2030 and the Climate Resilience Act in Dominica; the National Emergency and Disaster Management Act (2006) and the Caribbean Safe School Initiative in Saint Vincent and the Grenadines; and the School Protection Plan Guidelines and the Education Plan for Climate Change and Comprehensive Risk Management in El Salvador. Each country defines and structures its disaster response approach based on those policy instruments. This is reflected, on the one hand, in consolidated national strategies such as Dominica's National Resilience Development Strategy, which function as overarching frameworks for resilience; and, on the other, in more specific instruments that operationalize these approaches in concrete areas, such as school safety or comprehensive risk management. Together, this articulation between general frameworks and specific tools allows for the translation of a comprehensive vision of the problem into coherent and coordinated actions within the education sector.

(b) Strengthen national leadership and contextual adaptation of resilience approaches

Countries face the challenge of navigating a range of frameworks and initiatives while avoiding institutional overload. Rather than moving toward a single unified framework, it is crucial to support countries in selecting, adapting, and tailoring existing tools and approaches according to their national priorities. In this process, strengthening internal technical capacities is key to identifying, implementing, and sustaining these practices, recognizing that each country develops its own national trajectories and learning processes that should be valued. The case of Dominica shows how adopting the "build back better" and "bounce forward" approaches helps guide educational resilience under a shared principle following Hurricane Maria. Based on this approach, different initiatives and interventions are articulated and adapted within a coherent national logic, rather than as isolated actions.

(c) Coordination across different levels of government, as well as between government sectors, civil society, and international organizations, is complex but can ultimately be highly effective.

Coordination between different levels of government—from ministries to schools—as well as across sectors, civil society, and international organizations, is complex but can yield significant results when translated into operational plans and concrete support for education systems. Mechanisms such as CDEMA, Coordination Center for the Prevention of Natural Disasters in Central America, and the Caribbean Safe School Initiative, as well as global programs like Giga or crisis-sensitive educational planning by IIPE-UNESCO, have provided technical assistance, common tools, and spaces for exchange between countries. At the national level, experiences such as the Technical Roundtable on Disaster Risk Reduction for the Right to Education in El Salvador highlight the value of these spaces in connecting ministries of education with other public institutions, international cooperation, and education stakeholders in policy updates. Overall, evidence suggests that cooperation is more effective when coordination mechanisms are institutionalized, responsibilities across levels of government are clearly defined, and technical and financial support is ensured for implementation at different levels.

(d) Strengthen the articulation and dissemination of existing initiatives

Although the region has regulatory frameworks, programs, and information sources, many stakeholders remain unaware of the progress achieved across countries. Mechanisms for dissemination and systematization ought to be improved, coordination among initiatives strengthened, and regional interconnection and peer learning based on national experiences promoted. For example, the GADRRRES Champion Country initiative highlights the progress of countries that are incorporating the school safety framework into their national contexts. Strengthening these spaces of exchange, dissemination of good practices, and dialogue among stakeholders would contribute to the acceleration of regional learning and progress.

5.2 Institutional level: Strengthening education system capacities

(e) While educational resilience is often defined in terms of response, many countries emphasize that prevention and anticipation are key components

In this regard, the case studies show the importance of strengthening preparedness as a structural component of educational resilience. In Saint Vincent and the Grenadines, the School Safety Policy, the disaster risk reduction and climate change curriculum, and SERTs integrate anticipation into school life. Similarly, in El Salvador, the mandatory nature of risk management plans and the School Protection Plan Guidelines have institutionalized planning and drills in schools. Together, these experiences suggest that anticipation is strengthened when preparedness is systematically integrated into regulations, curriculum, and school management, beyond reactive responses to emergencies.

(f) Promote stronger empirical evidence and policy evaluation

Although information exists on country-level impacts of disasters and the responses implemented, systematic evaluation of educational resilience initiatives remains limited. Evidence reviewed includes analyses of impacts and post-disaster actions, including cases such as Haiti, Saint Vincent and the Grenadines, and El Salvador, but studies examining outcomes, effectiveness, and sustainability of interventions are still scarce. Strengthening evaluation mechanisms and evidence generation is key to informing policy decisions and consolidating replicable lessons.

(g) Program responses to vulnerable groups remain weak, and therefore these populations need to be prioritized in disaster response strategies.

The evidence collected points to a need to strengthen institutional capacities within the education system to incorporate an inclusive approach to risk management and disaster response. In this sense, resilience efforts should pay particular attention to students with disabilities, those living in poverty, rural populations, Indigenous communities, migrants, and refugees, all with a gender-sensitive approach. For example, in Saint Vincent and the Grenadines, educational challenges faced by communities outside the main island were highlighted, where educational opportunities and access to services are more limited and where disasters can have differentiated impacts on educational continuity.

5. 3 School level: Schools, curriculum, and learning

(h) With some exceptions, education on climate change, disasters, and related topics remains at an early stage; strengthening its integration into the curriculum is vital to promote resilience

Although there are developments and initiatives in this area, progress is often partial and not yet systematically embedded in the curriculum. Integrating these topics into teaching not only enables students to better understand risks associated with climate change and disasters, but also helps them develop improved capacities for prevention, adaptation, and response in crisis contexts. Furthermore, strengthening the curriculum can provide teachers with more pedagogical tools to address these topics in the classroom. In this way, schools become key spaces for fostering greater awareness of risks and promoting resilience capacities through education.

(i) Strengthen educational continuity after disasters beyond school reopening and pedagogical aspects

Educational continuity is a key priority after disasters, but it should extend beyond the mere restoration of schooling services. The direct and indirect effects of these events—linked to household economic losses, displacement, socio-emotional impacts, food services, and pre-existing geographical inequalities—affect educational trajectories and real learning opportunities in different ways. In this sense, response strategies should incorporate actions aimed at ensuring

learning quality, considering context-appropriate pedagogical modalities and avoiding exclusive reliance on distance solutions that may reproduce or deepen existing inequalities.

(j) Strengthen schools as safe and supportive spaces for students and communities

Schools not only fulfill a pedagogical function but also play a key role as spaces of protection and community support during and after disasters. Therefore, it is important to strengthen school preparedness through teacher training in risk management, emergency protocols, and improvements in resilient infrastructure. Experiences such as those in Dominica show that many schools function as temporary shelters and are equipped with basic emergency supplies. However, this role must be accompanied by measures that ensure educational continuity and prevent prolonged interruptions in learning.

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6 Annexes

Annex 1

Comprehensive School Safety Framework 2022–2030 (CSSF)
• Since 2012, GADRRRES, together with IIPE-UNESCO and UNICEF, has promoted school safety through the Comprehensive School Safety Framework (CSSF). • The CSSF sets priorities to ensure safe school environments. School safety includes infrastructure, management, risk education, and psychosocial support. • The framework aims to strengthen resilience to multiple hazards. • It promotes safe infrastructure and the reduction of barriers for vulnerable students. • It encourages intersectoral collaboration and a triple nexus approach (humanitarian, development, and peace). • GADRRRES developed the School Safety Survey as a tool within the framework. — In 2024, 25 countries participated, including several from the Caribbean and Central America. — 40% of countries lack funding for recovery, and only 8% have sufficient resources. — 68% of LAC countries show low capacity in teacher preparedness for resilience and climate change. • The "Champion country" category recognizes leading countries, such as Peru and Costa Rica.

Note: Based on Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (2022).

Annex 2

Caribbean Disaster Emergency Management Agency – CDEMA
• CDEMA is an intergovernmental agency of The Caribbean Community focused on disaster management. • It was established in 1991 as CDERA and was renamed CDEMA in 2009. • It acts as the coordinating body for Comprehensive Disaster Risk Management (CDRM) in the Caribbean. • It has 20 participating states, including several GPE partner countries. • Each country has a focal point, typically within national emergency agencies. • Its functions include: Coordination and mobilization of humanitarian assistance, mitigation of disaster impacts, coordinated response, and information dissemination. • It provides key tools, including: – The Caribbean Risk Information System – The CDEMA Regional Training Center – The Caribbean Safe Schools Programme – Early Warning Systems (EWS)

Note: Taken from https://www.cdema.org/ and CDEMA (2018)

Annex 3

Climate Smart Education Systems Initiative (CSESI)
• CSESI was established in 2023 by GPE, Save the Children, and UNESCO. • It aims to strengthen the capacity of education systems to respond to climate change. • It promotes the integration of sustainability into education plans, budgets, and strategies, as well as intersectoral coordination in climate and education policies. • Currently, 35 countries receive technical assistance across seven key dimensions, including Caribbean GPE partner countries. • In LAC, the initiative is in its early stages, with promising progress, particularly in national leadership, high levels of participation, and growing demand for climate-resilient education. • Its main actions include climate risk analysis in education, curriculum review with a sustainability focus, the use of data for decision-making, and country-level climate risk assessments, with technical assistance led by IIPE-UNESCO. • Key advances include curriculum review and mapping in the Caribbean, the integration of sustainable development, climate change, and Disaster Risk Reduction content, and the incorporation of resilience into teaching practices. • Progress has been identified in countries such as Dominica, along with regional support from the OECS, although gaps in implementation persist.

Note: Based on Global Partnership for Education (2024).

Annex 4

Frameworks, Agencies, and Key Initiatives on Disaster Resilience		
Names	**Responsible Entity**	**Description**
Frameworks		
Sendai Framework for Disaster Risk Reduction 2015	United Nations Office for Disaster Risk Reduction (UNDRR)	Global framework to reduce disaster risks*
Minimum Standards for Education – INEE (2024)	Inter-agency Network for Education in Emergencies (INEE)	Minimum guidance for education in emergencies
Agencies		
Coordination Center for Disaster Prevention in Central America and the Dominican Republic	Central American Integration System (Sistema de la Integración Centroamericana, SICA)	Regional coordination for disaster prevention and management Participating countries: Belize, El Salvador, Honduras, Nicaragua, and Guatemala
Pacific Disaster Center (PDC)	University of Hawai'i	Advanced platform for hazard analysis and response
Initiatives		
GIGA Initiative	International Telecommunication Union (ITU) and UNICEF	Global initiative to ensure digital connectivity in schools Participating countries: El Salvador, Honduras, Belize, Dominica, Grenada, Saint Lucia, Saint Vincent and the Grenadines
Greening Education Partnership	UNESCO	International education strategy for climate action Participating countries: Haiti, Honduras, Guatemala, and Nicaragua
Crisis-Sensitive Educational Planning	IIPE-UNESCO	Framework to strengthen resilience in education systems

Note: Adapted from National Coordination for Disaster Reduction (2022); United Nations (2015); GADRRRES (n.d.); INEE (2024); Coordination Center for the Prevention of Natural Disasters in Central America (n.d.); Pacific Disaster Center (2024); PDC (2021); International Telecommunication Union (2021); IIEP-UNESCO (2025); UNESCO (n.d.).

When GPE participating countries are not specified, these initiatives or frameworks do not have formal country membership but may be voluntarily adopted.

*The United Nations Office for Disaster Risk Reduction (UNDRR) defines disaster risk reduction as the desired outcome of all measures that can be taken to minimize human, material, basic service, and economic losses caused by natural or human-induced hazards, through disaster risk management (UNDRR, 2021).

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