

July 2022

How can girls' secondary education in rural areas in emerging economies contribute to strengthening resilience to climate change by 2030?



60 Million Girls Policy Lab Team

Aiza Abid, Fanuel
Gebremeskel, Pragma Tikku,
Sugandha Gupta, Sumaya Ugas



TABLE OF CONTENTS

ACKNOWLEDGMENTS	
EXECUTIVE SUMMARY	1
INTRODUCTION	6
RATIONALE AND METHODOLOGY	7
BREAKING DOWN THE RESEARCH QUESTION	8
ESTABLISHING THE NEXUS – GENDER, EDUCATION AND CLIMATE	12
BENEFITS ARISING FROM THIS NEXUS	14
BARRIERS TO REALIZING THE NEXUS	16
THE ROLE OF 60 MILLION GIRLS	19
RECOMMENDATIONS	20
IMPLEMENTATION STRATEGY	29
RISKS AND OPPORTUNITIES	32
CONCLUSION	39
ANNEXES	
ANNEX A: Acronyms	431
ANNEX B: Key Terms and Definitions	42
ANNEX C: Gantt Chart	
ANNEX D: Logic Model	
ANNEX E: List of Stakeholders Interviewed	
BIBLIOGRAPHY	

ACKNOWLEDGMENTS

The authors would like to sincerely thank Wanda Bedard and her team at 60 Million Girls for providing us with this unique policy challenge and for offering valuable insights throughout this project. We appreciate all that the organization is doing to advance girls' education in regions across the globe and for the resources they shared to help contextualize our understanding of this important work.

Special thanks to our coach, mentor, and guide, Ndidi Okonkwo Nwuneli for her invaluable supervision and guidance at each step of this project over the last eight months. It has been an immense pleasure working on this report under her leadership. We are indebted to her for helping us realize our potential.

The support, encouragement, and guidance extended to us from Nathalie Duchesnay, Policy Lab Coordinator at the Max Bell School of Public Policy is deeply appreciated.

The authors also recognize the efforts of Chris Ragan, Director, Max Bell School of Public Policy and Leslie Fierro, Faculty Lecturer at McGill University for their expert advice, input and guidance during the pursuit of this report.

Last but not the least, we would like to thank the stakeholders who took the time to meet with us and provided their valuable insights. The list of stakeholders interviewed can be found under Annex D.

Disclaimer:

This document is prepared as part of a Max Bell School of Public Policy capstone project. The project is a student consultative assignment, which is a component of the Master of Public Policy degree requirement. The research and recommendations provided in this report are purely the authors' responsibility and do not reflect the views of McGill University, the Max Bell School of Public Policy, the sponsor organization, or the stakeholders consulted in the process. All insights in this document have been gathered through stakeholder interviews, review of reports, and secondary research.

EXECUTIVE SUMMARY

There is an urgent need to comprehensively address the global climate crisis and reduce the rate and impact of global warming. Education has long been recognized as a critical pathway to adapting to the impacts of climate change. Secondary school education has been understood as a crucial entry point to expanding understanding and awareness of climate change. The role of girls' education is currently gaining traction as an important lever to foster climate action and develop sustainable outcomes. It is in this vein that this policy challenge attempts to identify how quality, gender-equal, and climate-focused education for girls can help communities and in turn countries build resilience against the effects of climate change.

Overview

This report presents findings and policy lessons on the climate, gender and education nexus. The analysis considers the implications of this nexus in rural regions in emerging economies that are markedly more vulnerable to the effects of climate change and provides guidance to chart a new path forward. This research was conducted within the context of 60 Million Girls' mandate to advance girls' education and support sustainable outcomes for girls in emerging economies around the world.

The three main objectives of our policy study included the following:

1. Explore how girls are more vulnerable to climate change, in order to understand the key challenges faced by women and young girls in accessing quality secondary school education within specific priority regions.
2. Recognize girls as agents of change and how empowering girls and gender-responsive education efforts contribute to climate resilience.
3. Develop gender-responsive policy recommendations that can be used to inform the work of 60 Million Girls, its partners, and like-minded agencies to advance girls' education and strengthen climate resilience strategies.

This policy project drew on qualitative data gathered through interviews and secondary research including a detailed review of government, nonprofit and civil publications and engagement with 60 Million Girls and its partners. The work also referenced literature provided by key stakeholders in the ecosystem, which included 24 key informant interviews with experts knowledgeable in the areas of gender, climate, and educational considerations in emerging economies and international contexts.

Key Findings

The value in exploring these issues

The gendered impacts of climate change are pronounced in the increased dropouts and challenges faced by girls in accessing and continuing their education. Worldwide, 129 million girls are currently estimated to be out of school.¹ The Malala Fund has estimated that climate-related events are expected to prevent 12.5 million girls from completing their education in low and middle-income countries each year by 2025.²

Adolescence exacerbates many of these challenges: current estimates suggest that almost half of the world's adolescents do not attend secondary school.³ Adolescent girls face added challenges that emerge from the social, psychological and physical changes experienced during puberty. During this time, poverty and inequity often exhibit intergenerational effects as poor adolescent girls often give birth to impoverished children. This is particularly true among adolescent girls with low levels of education.⁴ Climate challenges combined with educational disadvantages and gender discrimination are recognized as potential factors that force adolescents into lives of exclusion and poverty, child marriage, and domestic violence. It is estimated that around one-third of girls in the developing world are married before age 18 and in a few countries, almost 30% of girls under 15 are also married.⁵ A lack of sufficient information, skills, and readiness to overcome or manage this stressful situation makes girls vulnerable.

Emerging evidence suggests that quality secondary school education can help girls to build and protect social capital and understand, cope with, and respond to environmental stressors and climate change.⁶ The returns of secondary school education are increased when students have access to both conventional higher education and community-based education. These are seen to be pivotal mechanisms to institute behavioural changes and empower learners to be conscious decision-makers.⁷ Secondary education can also facilitate the critical exploration of ideas to help adolescents create career plans and aspirations for the future that dramatically impact their communities and countries' climate resilience.

With respect to climate resilience, evidence suggests that the worsening effects of climate change necessitate a focus on climate resilience and the importance of capacity building. A community or country is considered to be resilient in the face of climate change if it can anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions arising from climate change.⁸ Resilience thus is seen to be a more sustainable way to help societies respond to climate change.

The importance of girls' education in improving future employment, health, and environmental outcomes is also highlighted in the 2030 Agenda for Sustainable Development. The suggested 2030 timeline stressed within this report aligns with the global calls to action represented by the SDGs and the promises made by nations at the recent COP26 conference.⁹ The IPCC suggests that the world must rapidly decarbonize, reducing emissions by 45% from 2010 levels by 2030 to reach the greater net-zero emissions goals by 2050.¹⁰

There is also growing recognition that the impacts of climate change are borne disproportionately by those populations and countries that have historically been the least responsible for present-day emissions.¹¹ The consequences of climate shocks are thus unevenly distributed across regional and social boundaries.

The report findings indicate that jointly considering climate gender and education can lead to effective climate resilience. Evidence shows that investing in girls' education, particularly secondary education, has been shown to be an effective socioeconomic determinant to reduce vulnerability to weather-related disasters. This is because 12 years of quality education is seen to reduce the underlying inequalities that both increase girls' vulnerability to climate change and help perpetuate its root drivers.¹²

The linkage between girls' education and climate resilience is also reflected in recent data that shows that for each additional year of schooling girls receive, their countries' resilience increases in the range of 1.6–3.2 points.¹³

Climate-related benefits that arise from investing in girls' education

Investing in girls' education produces a myriad of immediate and sustained benefits that have a multiplier effect on the lives of girls, their families, communities, and societies at large. Study findings focused on four critical benefits:

1. *Family planning and reproductive health benefits are realized through girls' continued education:* Quality education equips girls with the knowledge and tools necessary to make informed decisions on family planning and determine how many children they will bear, if at all. This is seen to have cascading environmental benefits that mitigate the challenges that arise from increased population growth such as future resource strains and exposing more people to climate-related risks in low-resource regions.
2. *Climate leadership and environmentally conscious decision-making are cultivated through girls' education:* Schools represent the principal mechanism to prepare youth for success in broader social and economic settings. Formal education that is both gender-sensitive and climate-conscious connects those fundamental soft skills with efforts to improve climate literacy and awareness and this, in turn, can catalyze climate leadership. Empowering girls through high-quality climate-conscious education can help them challenge notions of passive victimhood and become powerful change agents for sustainability in their communities.
3. *Schools can prepare girls to shape climate-resilient economies:* The urgent nature of the climate crisis necessitates the pursuit of a multitude of climate strategies; this is represented in existing economic shifts to greener technologies and the creation of green jobs. To this end, incorporating green skills into the learning environment and curriculum can prepare girls to participate and thrive in a more climate-resilient economy upon graduation. A gender-sensitive and pro-climate education can also help to resolve the current underrepresentation of girls in STEM and unlock opportunities in STEM-based jobs in the economy post-graduation.
4. *Girls' education as a life-saving measure:* The lifesaving implications of an investment in girls' education are most pronounced for girls from low-resource and highly vulnerable regions. A study of 125 countries found that the death toll caused by floods, droughts, wildfires, extreme temperature events, and extreme weather events could be 60% lower by 2050 if 70% of women were able to achieve a lower-secondary-school education.¹⁴

Barriers to realizing this nexus

Findings from stakeholder interviews and literature suggest that there is a range of barriers or obstacles that hinder the investment in and realization of girls' education as a climate solution. The barriers are organized across seven broad categories.

1. *Gender, climate, and education experts working in silos:* Presently, many leaders in each of these subject areas are working independently to address girls' education and climate resilience. The disconnection across sectors and among key stakeholders and decision-makers leads to inefficiencies, disruptions to the flow of information, and imposes additional costs that impede the advancement of their shared objectives.
2. *Lack of understanding of education as a means to build climate resilience:* Stakeholder interviews and research findings revealed that there is a lack of awareness of the opportunity

to jointly consider the overlapping agendas and mutual benefits that arise from investing in girls' education. At the community level, this lack of awareness has resulted in counterproductive results where families have pulled girls out of schools to address the challenges that arise from climate shocks.

3. *Existing gendered harmful societal norms and practices:* Existing traditions, social norms and gender biases often prevent girls from accessing and completing secondary school. These barriers are heightened in the face of climate events with disruptions to health, safety and security provisions that in turn, increase the risk of violence, exploitation, and the overall vulnerability of girls.
4. *Gender disparity in accessing resources:* Resource scarcity is exponentially increased in the aftermath of climate events. This scarcity results in the de-prioritization of resources critical to women and girls—especially resources related to menstrual health management (MHM). Gendered disparities in the access and provision of resources prevent the participation of girls in classrooms.
5. *Underfunded climate-resilient infrastructure in schools:* Many low-middle-income countries have substandard infrastructure that is unable to withstand extreme weather events. Study findings reveal that the lack of climate-resilient infrastructure has detrimentally impacted girls' education.
6. *Unavailability of supplementary climate curriculum:* Data shows that in many emerging economies climate-related programs and modules are not mainstreamed across national curriculum frameworks.¹⁵ In addition, there is also a lack of teacher training on climate change and its interaction with gender which has resulted in gender gaps in learning and skills development and pro-climate outcomes.
7. *Lack of political will on the inclusion of girls in climate strategies:* Stakeholders continuously stressed that many government policies have not been translated into action. The government programs to address extreme weather events are often not funded adequately or disconnected from the needs of the locals. These action plans also often exclude gender-responsive priorities.

Recommendations for 60 Million Girls and its partners

60 Million Girls and the agencies they fund can play an instrumental role in addressing these barriers and promoting girls' education as an effective climate solution. The organization's current mandate to support the retention of girls in schools in tandem with their efforts to improve the structure, nature and content taught within those schools is the critical combination of actions needed to galvanize systemic change. The recommendations outlined below are segmented across two major potential implementers, namely 60 Million Girls and its partners.

Recommendations to be implemented by 60 Million Girls

1. Integrate climate considerations into organizational practices and policies to improve the institutional capacity to help realize greater climate adaptation and resilience through girls' education.
 - a. Develop a climate-focused education and operations policy.
 - b. Integrate climate-related metrics and language into funding applications and project review and proposal processes.
 - c. Add climate-related considerations and language to the webpage and communications materials.
2. Foster international collaboration through multi-stakeholder dialogues and a central repository to facilitate knowledge sharing between international organizations and funders on the issue of girls' education and climate resilience.

Recommendations to be implemented by partners

3. Engage with local NGOs and governments to address barriers to gender equity for climate resilience
4. Develop "green" standards for schools adopted and/or built by 60 Million Girls Partners
 - a. Develop climate-resilient infrastructure, including WASH facilities
 - b. Train the teachers on local environmental and climatic conditions, associated risks and management strategies.
5. Implement climate and gender-focused supplementary curriculums to be disseminated through Remote Area Community Hotspot for Education and Learning (RACHEL)
6. Enable schools to serve as community resource hubs to empower community members to be climate resilient
 - a. Host information sessions on climate resilience at schools for community education.
 - b. Post information on climate bulletin boards that act as early warning systems in schools.
7. Leverage existing women and girl-based groups and leadership structures to serve as climate champions
8. Conduct an environmental scan of government policies and actions on education, climate, and gender and identify strengths and areas for improvement that the community groups can utilize to advocate for changes.

These proposed recommendations present a number of critical pathways that, if properly implemented, could enable 60 Million Girls and its partners to effectively build resilience in emerging economies through investments in girls' education. The recommendations present various benefits as well as some potential risks. Though efforts have been made to outline mitigating measures, further work is needed to ensure the viability of these actions. Targeted interventions and sustained collaborations among key actors will ultimately help reduce the existing vulnerabilities and increase the resilience of communities to climate events. As the world moves towards net-zero emissions, investing in girls' education is a powerful catalyst for transformative change and effective climate action.

INTRODUCTION

Climate adaptation has emerged as an essential strategy for countries around the globe to reduce the intensifying and inevitable impacts of climate change. Evidence shows that while emerging economies were responsible for only 21% of carbon emissions between 1850 to 2011, they faced 78% of the social costs of climate change resulting from greater exposure to natural disasters, weak infrastructure, and less reserve capital to fall back on. ¹⁶ These social costs are estimated to rise to 87% by 2035, along with the irreversible loss of indigenous knowledge systems in the rural communities that are central to key climate change adaptation solutions. ¹⁷

While considering the extensive impacts of climate change, gender dimensions are indispensable, as climate vulnerability exacerbates existing power relations, norms, and practices that inhibit progress toward achieving gender equality. As a result, compared with men, women and girls experience greater social, economic, and health impacts of climate change. ¹⁸ The considerations of age create an additional layer of vulnerability through which climate change intersects. Adolescent girls face a higher risk of being pulled out of school after extreme weather events to help alleviate domestic burdens such as fetching water and taking care of siblings. They face a greater likelihood of early marriage to enable their parents to cope with growing economic hardships or protect girls from the safety concerns that arise in the aftermath of weather-related disasters. Hence, restricted mobility and limited access to financial and social capital precludes girls from accessing relevant information and skills needed to cope with climate shocks and places them in a vicious cycle of intergenerational poverty and marginalization. ¹⁹

Emerging evidence confirms that girls' education is one of the most effective climate adaptation strategies. The longer girls stay in school, on average, the longer they delay transitions to adulthood and childbearing. ²⁰ Educated women are better equipped to protect themselves and their families from climate shocks and participate in decision-making at local, national, and global levels. This reduces the vulnerability of better-educated families and communities as they are able to cope with and bounce back from the physiological and economic impacts of natural hazards. ²¹ Thus, there is an urgent need for policymakers to consider girls as important stakeholders and agents of change in the climate debate in communities across the globe.

Within this context, this report attempts to identify how quality, gender-equal, and climate-focused education for adolescent girls can help rural communities build resilience against the effects of climate change; and how this, in turn, can contribute to developing resilience at the country level. This document presents the implications of the climate, gender, and education nexus in emerging economies that are markedly more vulnerable to the effects of climate change. The aim is to make policy recommendations on how 60 Million Girls—a public foundation dedicated to girls' education in developing countries—and their implementing partners can help strengthen the adaptive capacity of communities in the face of climate change by 2030. The analysis draws on data from countries experiencing the identified core challenges related to climate vulnerability and gender imbalanced educational attainment.

RATIONALE AND METHODOLOGY

This policy report seeks to outline the gendered impacts of climate change and the role of girls' education in building climate-resilient communities. This work considers the historical, social, and political contexts that have disadvantaged girls in emerging economies and adopts an intersectional lens rooted in substantive equality and a Human Rights-Based Approach (HRBA). The report is broadly framed within the context of 60 Million Girls' mandate to advance girls' education and support sustainable outcomes for girls in emerging economies around the world.

Objectives and guiding principles

The main objectives of this policy study are to

1. *Explore how girls are more vulnerable to climate change* and uncover the key challenges faced by girls in accessing quality secondary school education within specific priority regions, especially in emerging economies.
2. *Recognize girls as agents of change* and examine how empowering girls and prioritizing gender-responsive education contributes to climate resilience.
3. *Develop gender-responsive policy recommendations* that can be used to inform the work of 60 Million Girls, its partners, and like-minded agencies to advance girls' education and strengthen climate resilience strategies.

Research Question

“How can girls’ secondary education in rural areas in emerging economies contribute to strengthening resilience to climate change by 2030?”

Methodology

The project drew on evidence from an array of sources, including key informant interviews, government, civil society and nonprofit publications, and open-source data provided by key stakeholders in the ecosystem.

All stakeholders were identified through purposive and snowball sampling techniques given their knowledge and understanding of relevant gender, climate, and educational considerations in emerging economies and international discourses. A total of 24 key informant interviews were conducted over a three-month period. The stakeholders reflected a broad diversity of sectors and included government functionaries, NGO and IGO representatives, think tanks, activists, and development partners. Key informants included representatives from the Brookings Institution, UN Women, Campaign for Female Education (CAMFED), Bill and Melinda Gates Foundation, Change for Children, The Education Outcomes Fund, and Room to Read, among others. A full list of stakeholders is included in Annex D.

Much of the research began with a focus on India and Nigeria, two emerging economies that represented the parts of the world most imperiled by climate change, such as Africa and South Asia which face additional challenges given the grim state of their schools. The stakeholders consulted from both India and Nigeria were representatives of areas which are prone to extreme weather events. In India, our engagement focused on the low-lying regions along the Eastern Belt which are prone to rising sea levels. These included the rural coastal areas of the state of Odisha and the island district of Majuli in Assam. In Nigeria, this included a strong focus on regions impacted by drought and desertification that largely affected the arid and semi-arid zones in

northern Nigeria. The interviews included a breadth of representatives from the field, ranging from city planners to gender and climate advocates and NGO representatives from the impacted areas as well as those operating at the national level including the governments. Over the course of the project, research efforts extended beyond these two nations as many of the challenges were shared across the developing world. Evidence of these challenges and lessons learned through literature review and the interviews with international stakeholders are reflected throughout the report. Emerging solutions were also sourced from the literature and appear as case studies in the body of the document.

Limitations

- As the nexus of girls' education and climate change is an emerging area of discourse, there is a dearth in the availability of adequate quantitative data on the nexus.
- Due to a combination of funding, logistical, and COVID-19-related travel constraints, only online interviews with secondary stakeholders were conducted (via Zoom).
- Interviews with primary stakeholders (e.g. people with lived experiences) were removed from the scope of the project in accordance with the Policy Lab guidelines.

BREAKING DOWN THE RESEARCH QUESTION

Why Girls Matter

Climate change has a disproportionate impact on girls wherein existing gender inequalities are exacerbated.²² This is reinforced when girls drop out of school because the school infrastructure is damaged by weather disasters or when girls are required to take time away from school to support their families and recoup losses from climate change events.²³

Worldwide, there are currently 129 million girls who are estimated to be out of school.²⁴ According to the Malala Fund, climate-change events will prevent at least 12.5 million girls in low- and middle-income countries from completing their education each year.²⁵ Women and girls face the burden of unpaid care responsibilities that are intensified through climate change. A lack of water, sanitation and hygiene (WASH) affects a women's sense of dignity and self-worth and denies the realization of sexual and reproductive health rights (SRHR).²⁶ In 2016, around 335 million girls went to primary and secondary schools that lacked essential resources for menstrual hygiene management (MHM).²⁷ The secondary impacts of climate change such as the salinization of water due to rising sea levels reduce the availability of fresh water and force girls to fetch water from far away areas.²⁸ Temporary schools opened during climate emergencies also have safety implications for girls, as there is an increased likelihood of violence and harassment.²⁹

These multifaceted impacts of climate change discourage girls from accessing continued education.³⁰ Data from the COVID-19 pandemic has also shown that girls are less likely to return to school after disruptions to their education. UNESCO has estimated that approximately 11 million girls will not return to school post-pandemic.³¹ These concerns are compounded by enhanced vulnerabilities that play a critical role in shaping their opportunities for education and life.³² As such, prioritizing efforts to limit the vulnerability of girls to climate change is needed to help build a country's resilience to climate change.

The many benefits of educating girls in addition to their leadership role in building climate resilience have been established. Research has shown that educating girls leads to an increase in agency and decision making, economic growth through better work opportunities for women, less likelihood of getting married and bearing children at an early age, improved child nutrition and equipping girls to adapt themselves and their families to climate change. Arguably, given the unpredictability of climate change, the time has come to improve the education in emerging economies, especially for girls to make societies more resilient.³³ It must also be noted that if all girls receive 12 years of quality education, they could contribute up to \$30 trillion to the global economy.³⁴

Why Adolescence Matters

This report follows the definition of adolescents used by the WHO which is described as the period between childhood and adulthood, from 10 and 19 years of age.³⁵ Adolescents currently constitute roughly 1.2 billion of the global population; 85% of which live in developing countries. Most adolescents—up to the age of 18—are broadly classified as children and yet, their vulnerabilities and needs are distinctly different from those of children and often remain unaddressed. Recent data has also shown that in some countries more than 50% of adolescent girls experience mild to severe stress due to pubertal changes.³⁶

Today, almost half of the world's adolescents do not attend secondary school.³⁷ For those that do attend, many particularly those from the poorest households and most marginalized communities—fail to complete their studies or finish with insufficient skills (especially those high-level competencies required by the modern globalized economy). This skills deficit is consequently contributing to dismal youth employment trends.

Adolescence is understood to be a pivotal decade when poverty and inequity display their intergenerational effects: poor adolescent girls often give birth to impoverished children. This is particularly true among adolescent girls with low levels of education. This is in part due to the social, psychological and physical changes experienced by adolescent girls during puberty including a shift in the perceptions of girls during this time. A lack of sufficient information, skills, and readiness to overcome or manage this stressful situation makes girls vulnerable. For this reason, the transmission of poverty across generations is most apparent among adolescent girls.

Educational disadvantages and gender discrimination are recognized as potential factors that force adolescents into lives of exclusion and poverty, child marriage, and domestic violence. It is estimated that around one-third of girls in the developing world are married before age 18 and in a few countries, almost 30% of girls under 15 are also married.³⁸ The poorest adolescent girls are also those most likely to be married early and are at risk of being caught up in the negative cycle of premature childbearing, high rates of maternal mortality and morbidity and high levels of child undernutrition.

The evidence shows that educated girls realize greater social, economic and health-related outcomes. When adolescent girls are educated, they are empowered to become leaders and enact transformational social changes. Today, adolescent girls are leading climate action and awareness efforts and are helping to transform the face of environmentalism. A recent analysis of climate

protests from 67 different countries found that young women comprised the majority of climate activists.³⁹

Quality education that is relevant to adolescent lives empowers young people with the confidence, knowledge, and skills needed to meet the present and future global challenges. The intersectional and unique nature of female adolescents means that there is also a need to address the issue of ‘period poverty’ through adequate MHM to improve adolescent girls’ educational, health, and wellbeing outcomes.

Why Secondary Education Matters

Research identifies the education sector as an important stakeholder in addressing climate change. This is because it plays an important role in building a child’s agency and contributes to the development of skills, knowledge, and behaviours related to environmental management and sustainable development. Emerging evidence also suggests that education can help people not only build and protect social capital in general, but also to understand, cope with, and respond to environmental stressors and climate change.⁴⁰ This finding is strongly correlated to the education of women.⁴¹ While higher education plays a key role in developing and sharing technological advances, school and community-based education are also pivotal in instituting behavioural changes needed by children.⁴² Secondary education can facilitate the critical exploration of ideas to help adolescents create career plans and aspirations for the future. The Right to Education also appears as a cross-cutting theme in numerous rights-based treaties such as Article 26 of UDHR, UNESCO’s CADE (the first international legally binding instrument entirely devoted to education), ICESCR, ICCPR, CRC and CEDAW (which specifically considers the needs and circumstances of women and girls). These international instruments underscore the importance of education and its role in children’s development and in allowing children to reach their full potential.

Research on girls’ education has consistently demonstrated significant positive returns from investing in girls’ access to and completion of quality education. The returns to education for girls are higher than for boys at all levels of education, with an average increase in wages for children with a secondary level of education at 8.7% for girls and 7.1% for boys.⁴³ Further, studies show that in countries with high rates of child marriage, keeping girls in school beyond the primary level is one of the best ways to avoid early marriage.⁴⁴ Similarly, a woman who has completed secondary school is likely to have one fewer child over her lifetime than a woman who has only completed primary school. Data shows that if universal education for girls were achieved tomorrow, the population in 2050 could be smaller by 1.5 billion people than if girls’ access to education remained the same as today; by 2100, that number could amount to 5.7 billion fewer people.⁴⁵

Why Climate Resilience Matters

Climate change has a disproportionate impact on girls and their enrollment and retention in school. Gendered household responsibilities on women and girls increase during disasters, leading to heightened vulnerability. Women in the Global South experience the effects of climate change more acutely than their male counterparts.⁴⁶

This report focuses on climate resilience, which is distinct from climate adaptation. Adaptation is the process of adjustment to actual or expected climate and its effects (i.e. it seeks to moderate harm or exploit beneficial opportunities).⁴⁷ By contrast, resilience is focused on building capacity.

Climate resilience is an overarching concept that includes adaptation and mitigating actions. It follows that, by definition, resilience ensures adaptation; however, the reverse is not true. Moreover, resilience is a more sustainable way of dealing with climate change.⁴⁸ A community or country is considered to be resilient in the face of climate change if it can anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions arising from climate change.⁴⁹

Why 2030 Matters

Our timeline for strengthening climate resilience aligns with the 2030 Agenda for Sustainable Development (SDGs)—the most comprehensive blueprint to date for eliminating extreme poverty, reducing inequality, and protecting the planet.⁵⁰ The SDGs are a universal, transformative, and rights-based framework that strives to achieve gender equality⁵¹ and the empowerment of all women and girls⁵² and ensure the lasting protection of the planet and its natural resources (i.e. through climate action).⁵³ To this end, the SDGs cement the importance of girls' education in improving future employment, health, and environmental outcomes at the individual and country level.⁵⁴ SDGs aim at promoting equal access for all in both primary and secondary education and emphasis is placed on the access to education for girls in developing countries. Moreover, the SDGs present quality education for girls as a means of breaking the cycle of poverty and therefore help to deal with gender-based inequalities.

Why Emerging Economies and Rural Areas Matter

While there are no borders to the climate crisis, UN experts state that the countries that have historically contributed the least to climate change are the most at risk of its negative effects.⁵⁵ Emerging economies are disproportionately burdened by unprecedented climate impacts, and they are often ill-equipped to adapt their current climate strategies to the situation unfolding around them.⁵⁶ The consequences of climate shocks are also unevenly distributed across regional and social boundaries, especially for vulnerable groups such as children, women and girls, and visible minority groups.⁵⁷ In the context of this report, it is pertinent to explore why girls specifically in these regions are experiencing the greatest impact of climate change. While developed countries tend to have the economic resources, technology, and infrastructure needed to develop and implement adequate resilience-building strategies, emerging economies, especially those in the early stages of their development, may not be financially stable enough to confront this challenge.⁵⁸

The ND-GAIN Index is among efforts to quantify a country's vulnerability to climate change and its readiness to strengthen resilience efforts.⁵⁹ It is no surprise that the countries which are the lowest-ranked overall (high vulnerability and low readiness scores) are those which are colloquially classified as emerging economies.⁶⁰ For instance, the ND-Gain Index (where higher rankings are better) places India and Nigeria at 121 and 161 out of 182 countries, respectively.⁶¹ Both countries also have very low mean years of schooling (India as 5.4 years and Nigeria as 5.7 years)⁶² which contributes to their low ND-GAIN scores. As per the Global Gender Gap Index 2021, India and Nigeria place 140 and 139 out of 156 countries respectively.⁶³ Both countries are classified as "low-middle income group countries" and place among the highest in terms of vulnerability and lowest in terms of readiness.⁶⁴ As such, during the preliminary research process for this report, India and Nigeria served as case study examples of countries in distinctly separate continents that experience climate change-induced burdens on educational opportunities for adolescent girls. The focus on rural areas, in particular, underscores the additional challenges

experienced by communities in these regions. As a direct consequence of climate change, many rural regions have experienced water scarcity, a decline in access to and quality of food, rising temperatures, growing prevalence of extreme weather events, and limited availability of natural resources.⁶⁵ Despite the increased vulnerability of emerging economies and communities in rural areas, emerging economies are leading the charge on the climate crisis and putting pressure on developed countries to make serious efforts to reduce emissions.⁶⁶ Through its work in rural regions, 60 Million Girls can play an instrumental role in leveraging girls' education as a climate resilience-building solution on the community- and country-level.

ESTABLISHING THE NEXUS – GENDER, EDUCATION AND CLIMATE

Climate change-induced extreme weather events can disrupt learning in a number of ways (e.g. destruction of school infrastructure, disruption of transport links, delayed restoration of WASH facilities, etc.) which in turn can preclude access to education. However, there is growing evidence of the role of education in supporting climate resilience, adaptation and mitigation, where girls' education, particularly secondary education, has been identified as the most important socioeconomic determinant to reduce vulnerability to weather-related disasters.⁶⁷ Encouraging participation and empowerment through education increases girls' voice and agency, and consequently supports collective action on the impacts of climate change.⁶⁸ Building girls' green skills such as critical thinking, problem-solving, teamwork, coping with uncertainty and negotiation through science, technology, engineering and mathematics (STEM) education has the potential to prepare girls to participate and lead in traditionally male-dominated green sector jobs.⁶⁹

This argument is further supported by recent evidence that identifies a strong positive association between the average number of years of schooling a girl receives and her country's ND-GAIN index ranking, measuring a country's resilience to climate disasters. According to this study, for every additional year of schooling a girl receives, her country's resilience to climate disasters increases on average by 1.6–3.2 points on the ND-GAIN Index.⁷⁰

Indeed, when girls and women are better educated and are included in decision-making at all levels, their families and communities are more resilient and adaptable to economic and environmental shocks; and they are better able to plan for, cope with, and rebound from weather-related disasters. A study has projected that conferring women between the ages of 20 and 39 with at least lower-secondary education holds tremendous potential to reduce future disaster-related deaths globally.⁷¹ Another study on weather-related disasters based in developing countries estimated that if countries had invested more in girls' education between 1960 and 2003, 465 million people could have been saved from injury and 667 million from drought, and the death toll from floods could have been reduced by 60,000.⁷²

Women also play a significant role in ensuring food security for their families. With extensive knowledge about their natural surroundings, they are at the forefront of the conservation and selection of seeds for different crops. Given they are fully aware of their families' needs, conferring greater decision-making powers for women at the family- and community-level with respect to the farming of more resistant crops could increase agricultural production, production and marketing of surpluses, and ultimately to a source of income.⁷³

Under the Paris Agreement, the governments' have committed to limit the rise in global temperatures to between 1.5°C and 2°C higher than pre-industrial levels by the end of the century. A transformative education that includes comprehensive sexual and reproductive health rights (SRHR) education (addressing topics such as sexuality, puberty, menstrual health, HIV and AIDS, and gender-based violence) can improve girls' SRHR outcomes. This has also been proven to be the most cost-effective way to limit temperature rise to 2°C by the end of the century, and reduce carbon emissions by 85.4 gigatons by 2050.⁷⁴ One study found that reducing 34 gigatons of carbon in the atmosphere would cost \$220 billion if spent on family planning, compared to \$1 trillion if spent on low-carbon technologies.⁷⁵ Similarly, countries with higher proportions of women in parliament or government positions are found to be more likely to ratify environmental treaties and create protected land areas than other countries.⁷⁶ The United Nations' 66th Commission on Status of Women (UN CSW66) is the most recent reaffirmation of the leadership of women in addressing climate change, wherein a blueprint has been adopted by world leaders to promote full and equal participation of women and girls in designing and implementing climate, environmental, and disaster risk reduction (DRR) policies and programs moving forward.⁷⁷

Hence, it is important that the development approaches focusing on reducing the risk of disasters do not treat children as passive victims but recognize their significant role in communicating risks or preventing and responding to disasters. Education is a powerful tool to teach young people about the impacts of global warming and ways to adapt to climate change. Though education empowers all people, it especially motivates the young to take action. For a child growing up in the age of rapid climate change, schools can assist them by creating a sustainable learning environment that focuses more on pragmatic solutions rather than theoretical lessons.

Education can also improve the socioeconomic status and the adaptive capacity of communities for individuals to have greater access to resources such as insurance, higher-quality housing, etc. Child-centered disaster risk reduction programs support the ability to reduce risk at household- and community-levels and empower children and young people to “mobilize adults and external policy actors to effect change on wider determinants of risk and vulnerability.”⁷⁸

However, the provision of basic facilities and enhancing enrolment alone would not ensure positive educational outcomes for climate adaptation and resilience. Education provision is likely to be more meaningful and participation in learning processes more active, if programs deliver knowledge and skills relevant to local needs and contexts.⁷⁹ According to the United Nations Population Fund (UNFPA), there are 1.8 billion youth between the ages of 10 and 24, out of which 600 million are adolescent girls.⁸⁰ This number is not merely a statistic, it represents both real-world opportunities and challenges for climate change.

BENEFITS ARISING FROM THIS NEXUS

Investing in girls' education generates a myriad of immediate and sustained benefits that are realized throughout a girl's lifespan and extend to improve the lives of their families, communities, and societies at large. In short, girls' education is generally recognized to strengthen economies and reduce inequality. This is attributed to the fact that girls who receive an education are less likely to marry young and more likely to lead healthy, productive lives. They go on to have higher incomes and are empowered to participate in the decisions that most affect them; and, build better futures for themselves, their families, communities, and their countries.⁸¹ These benefits can also

be extended to the environmental context as girls' education is recognized as a powerful catalyst for transformative change and effective climate action. Recent data suggest that girls' education is more effective in addressing climate emergencies than many existing and popular green technologies.⁸² Education and family planning are among the topmost effective solutions to reduce rising emissions and the concentration of greenhouse gasses in the atmosphere, surpassing notable pro-climate mechanisms such as electric vehicles, and the installation of solar rooftop panels, sea walls and dams.

The climate-related benefits of girls' education are also concretely illustrated in estimates from UNESCO that specify that educating girls could result in a massive reduction in emissions of 51.48 gigatons by 2050.⁸³ These benefits independently and collectively give rise to positive climate-based outcomes.

Family planning and reproductive health benefits are realized through girls' continued education

The first set of benefits convey the importance of girls' education as a mechanism to advance girls' reproductive health and rights. Quality education that includes a focus on gender equality and reproductive health can provide girls with an enhanced understanding and agency over their own bodily autonomy. This equips girls with the knowledge and tools necessary to make informed decisions on family planning and determine how many children they will bear, if at all. Population growth, along with increasing consumption, tends to increase emissions of climate-changing greenhouse gasses. It worsens the impacts of climate change by straining resources and exposing more people to climate-related risks—especially in low-resource regions.

The intersection between education, gender equality and reproductive health rights means that a positive investment in girls' education has a cascading benefit on girls, their family planning capacities, and the environment. Take, for example, the fact that 19 out of the top 20 countries with the highest total fertility rate are in sub-Saharan Africa, a region to have the highest vulnerability to climate change. Many of these same countries also have very low female literacy rates. Investments in the education of girls in these countries combined with increased access to family planning are expected to significantly improve climate adaptation and resilience across the region more broadly.⁸⁴ Research also shows that providing girls with quality education and the right to exercise their sexual and reproductive health freedoms, is expected to reduce fossil fuel emissions by 37% to 41% by the end of the century.⁸⁵

Climate leadership and environmentally conscious decision-making are cultivated through girls' education

Formal education is recognized to be an important tool to foster climate leadership and pro-environmental decision-making. Today, girls are seen as bastions for climate leadership around the world—young leaders such as Greta Thunberg are indicative of this. Schools represent the principal mechanism to prepare youth for success in broader social and economic settings. Formal education that is both gender-sensitive and climate-conscious connects those fundamental soft skills with efforts to improve climate literacy and awareness and this in turn, can catalyze climate leadership. In other words, education can help students develop a strong personal connection to climate solutions, as well as a sense of personal agency and empowerment. This can have a substantial impact on students' daily behaviours and decision-making that can reduce their carbon

footprint over the course of their lifetimes. Beyond this, empowering girls through high-quality climate-conscious education can help them challenge notions of passive victimhood and become powerful change agents for sustainability in their communities. In Nigeria, encouraging women to acquire formal advanced education in agriculture and forestry through funding mechanisms such as scholarships has been identified as an important adaptability mechanism, given the vitality of these sectors in the country. Outside the classroom, the broader political empowerment of women also contributes to a reduction in climate footprints, the development of stricter climate change policies, the establishment of more protected land areas and a host of other positive environmental outcomes.⁸⁶

Schools can prepare girls to shape climate-resilient economies

Much of the work to strengthen climate resiliency and develop innovative adaptation strategies begins in the classroom. However, the nature and urgency of the climate crisis necessitate the pursuit of a multitude of climate strategies and efforts that occur outside of the classroom context. This includes economic shifts to greener technologies and the creation of green jobs. To this end, incorporating green skills into the learning environment and curriculum can prepare girls to participate and thrive in a more climate-resilient economy upon graduation. Entry into 4th climate-forward labour force is predicated on knowledge of STEM subject area; a gender transformative and pro-climate education can help to resolve the underrepresentation of girls in STEM and insulate against their ostracism from STEM-based jobs in the economy post-graduation.⁸⁷ In addition, the transformative capacities built into climate-conscious curriculums proposed in the new green learning agenda also offer a framework for conceptualizing the green skills that catalyze both technical and social transformation.⁸⁸ In Nigeria, a civil society organization called STEM METS partners with schools to provide supplementary education to build girls' confidence by teaching them practical STEM skills as well as soft skills.⁸⁹

Girls' education as a life-saving measure

Most importantly, the principal benefit realized in investing in girls' education is the prospect of saving countless lives. The lifesaving implications of an investment in girls' education are most pronounced for girls from low-resource and highly vulnerable regions. A study of 125 countries found that the death toll caused by floods, droughts, wildfires, extreme temperature events, and extreme weather events could be 60% lower by 2050 if 70% of women were able to achieve a lower-secondary-school education.⁹⁰

Incorporating girls' education as part of an interconnected system of complementary climate solutions can foster a strong foundation of climate adaptation and resilience and make a significant contribution to achieving nearly all the SDGs. However, these climate-relevant and transformational benefits are ultimately only realized when girls are empowered as agents of change and the foundational role of girls' education for long-term climate resilience is both recognized and honoured.

BARRIERS TO REALIZING THE NEXUS

As established above, the integration of the three sectors on gender, education and climate can potentially uplift women and girls as powerful agents of change and lead to more equitable climate action in the pursuit of sustainable development. However, existing complexities at various levels compounded challenges for researchers, NGOs, and policymakers to realize this objective.

Gender, climate, and education experts working in silos

Presently, many leaders in each of these sectors are working independently to address the common issue of girls' education and climate resilience. However, the intersectional nature of this issue as well as the limited funding and resources in this space makes collaboration deeply desirable. Breaking down silos in education and climate spaces can help promote knowledge sharing and ensure that research efforts are not being duplicated in order to move the dial forward, but it also means diverting from the status quo as many organizations in this space have been historically resistant to change. Not all leaders are prepared to join forces and galvanize necessary action toward girls' education and climate resilience. This in turn leaves minimal room for the inclusion of cross-sectoral actors when designing mechanisms to achieve climate action. Similarly, the disjointedness of present research and policymaking processes leads to inefficiencies, disruptions to the flow of information, and imposes additional costs that make the process more difficult than it needs to be.

Lack of understanding of girls' education as a means to build climate-resilience

Education provides people with the confidence to break free of traditions, the curiosity to acquire new information and the cognitive skills to process and act on it. A study based in India revealed that persistent flooding resulting in the destruction of crops and the spread of vector-borne diseases such as malaria and dengue fever results in an increased likelihood of stunted infants by 20%.⁹¹ This would contribute to their underperformance in schools. If the mothers of these children were educated and understood more about nutrition, hygiene and medicine, they would be equipped to acquire new information and respond to sudden climate-induced events. Similarly, in Thailand, a study projected that a 1% increase in the number of women with secondary education raises the odds by 11% for a household in the village to be prepared for a disaster such as a tsunami.⁹²

The role of community plays a critical role in fostering the education of their girls. Less-educated parents are more likely to prioritize other needs over education for girls. This sets a precedent for the next generation of hardship and failure. Whereas, better-educated parents prioritize education above anything and are confident in the results, be it better employment opportunities, decision-making capacity or building resilience to climate change.⁹³ These factors were also confirmed during the stakeholder interview, where it was pointed out that a large number of families in Kano State, Nigeria and Odisha, India prefer to send only their boys back to school after extreme weather events.

Harmful gender norms and practices

Stakeholder interviews shed light on the situations where girls are married as soon as they reach puberty. They are then expected to prioritize household responsibilities and bear children, which prevents their attainment of education. Education for girls is seen as more of a luxury than a right. Literature also establishes that girls are the first ones to drop out of school to support their families in unpaid care work such as household chores and caring for their siblings.⁹⁴ Thus, during extreme weather-related events, they are less likely to respond strategically or have any means of adaptation or mitigation to the ever-changing nature of climate disasters.⁹⁵ In an extreme example noted from the drought-prone state of Maharashtra in India, men marry two to three additional women to carry water from the wells and back. The condition of these "water wives" is an alarming situation reflecting the existing gender disparity and sole (and in this case, also risky) responsibility of care work for women.⁹⁶

These structural societal barriers become more challenging due to the impacts of climate change.⁹⁷ Girls are susceptible to violence, exploitation, abuse and even trafficking during extreme weather events. These issues are exacerbated with disruption of health, safety and security provisions and increase the risk of unplanned pregnancies, menstrual health and sexual and reproductive health problems.⁹⁸ For instance, at the start of 2020, 935 schools in Northeast Nigeria were closed as a result of a rise in conflicts over resources with increased attacks on school children, especially girls.⁹⁹ Later that same year, estimates show that nearly 1,000 students—most of whom were girls—had been abducted during attacks at schools across northern Nigeria.¹⁰⁰ This is evidence of a rising trend in Nigeria where schools are recognized to be among the worst institutional casualties of complex disasters. Girls in northern Nigeria are at the heart of the insecurity challenges that arise from the combined effects of desert encroachment and steadily depleting vegetation, increased emigration, the COVID-19 pandemic, and a rise in insurgencies, and communal clashes over resources.¹⁰¹ Increased attacks and the sexual harassment and kidnapping of school-aged girls have meant that even when schools are reopened, parents are unwilling to re-enroll their daughters and withdraw them from school entirely.¹⁰²

Gender disparities in accessing resources

Given the prevalence of gender disparities, women and girls in the aftermath of weather-related disasters are less likely to be able to access relief and assistance. This creates a vicious cycle of vulnerability to future extreme weather-related events as well.¹⁰³ There is a dearth in the provision of gendered relief materials such as the availability of sanitary pads and contraceptives.¹⁰⁴ Stakeholder interviews underscored the negligence of government authorities on the hygiene and sanitation issues during extreme weather events which led to an increase in existing SRHR issues for women and girls. Campaigns such as #DignityInFloods pushed state governments in Assam, India to rethink their priorities, resulting in the Assam State Disaster Management Authority issuing notifications to all districts to include sanitary napkins in the list of relief items for flood relief centers.

Similarly, one set of resources that is frequently at risk and rarely guaranteed for women and girls is WASH. Nearly one-third of schools around the world lack adequate MHM and WASH facilities.¹⁰⁵ The unavailability of means to dispose of sanitary pads, water to wash hands, and safe conditions for maintaining menstrual hygiene discourages many girls from going to school.¹⁰⁶ “Period poverty” has been recognized as one of the most pressing issues of gender inequality and climate change.¹⁰⁷ As menstruation remains a taboo in many communities, it remains difficult for girls to complete their education and progress through life. This is especially true for adolescent girls in the secondary school level of their education. Our stakeholder interviews pointed to this grim reality of non-functional toilets for girls in many rural schools, which discourage girl retention. In northern Nigeria, the lack of proper toilets often causes girls to stop going to school; for instance, some schools have tented toilets, which are generally problematic for privacy as well as security concerns. This forces girls to avoid using these toilets, especially during their menstrual periods eventually forcing them to drop out of school.¹⁰⁸

Lack of climate-resilient infrastructure in schools

Underfunded educational infrastructure is a reality in most countries and therefore makes schools vulnerable to hazards such as floods, typhoons and any other sudden extreme weather-related

events. In Haiti, 80% of schools were either damaged or destroyed post the 2010 earthquake. Following the 2010 earthquake in Chile, 1.25 million students were displaced due to the closing of 6,000 damaged or destroyed schools.¹⁰⁹ The evidence poses a serious risk and adds to the list of conditions discouraging girls and their families from their education. Our stakeholder interview with a non-profit from Majuli (island district in Assam, India) illustrates that even though flooding is a yearly phenomenon, there has been no formal initiative to build climate-resilient school structures. Similarly, in Northern Nigeria, during the rainy season, flooding damages the infrastructure of the schools. Whereas in the dry season, prevalent climate change-related fire outbreaks leading to structural damages has disrupted these educational institutions.¹¹⁰

Absence of supplementary climate-curriculum

Changes in curriculum require time, continued advocacy and approval from the government. The present curriculum taught in schools lacks a girl-focused understanding of climate change and its adaptation and mitigation strategies. The need for a supplementary climate-related curriculum is recognized and 95% of teachers across 100 countries agree that students need to learn about the effects of a changing climate.¹¹¹ The challenge that lies here is that climate-related programs are not mainstreamed as nearly half (47%) of national curriculum frameworks and for the rest, the depth of inclusion was seen to be minimal. There is also a lack of teacher training on climate change and sustainable lifestyle and its interaction with gender. As teaching practices have been historically noted to not be gender-responsive, it has resulted in gender gaps in learning and skills development. Few stakeholders also pointed out how environmental education or disaster management curriculum in certain rural areas of India is treated as a “tick-box” exercise underscored by insufficient skilling of teachers to address the localized climate issues and information on requisite interventions to the children.

Lack of political will on the inclusion of girls in climate strategies

Key informant interviews continuously stressed that many government policies have not been translated into action. The government programs or toolkits to address extreme weather events are often not funded adequately or disconnected from the needs of the locals. These action plans also completely or partially lack gender-responsive priorities. This can be confirmed by the fact that even though 185 countries have agreed under COP26 held in 2021 on limiting the rise in temperature by 2 degrees Celsius¹¹² less than 2% of their national climate strategies mention girls.¹¹³ International commitments have established that girls' education must be a global development priority. In order to achieve emissions reductions, governments, state institutions, politicians, policymakers, and other actors must prioritize intersectional and inclusive conversations with those with lived experience, particularly in the Global South.¹¹⁴

THE ROLE OF 60 MILLION GIRLS

Since 2006, 60 Million Girls has been playing a crucial role in helping girls acquire skills to improve their lives and their communities. The foundation has implemented various projects in emerging economies in collaboration with several partners. Even though these projects vary in form, ranging from building school infrastructure and facilitating access to learning opportunities to soft aspects on fostering skill development, improving critical thinking and enhancing the supportive learning environment for girls; their overarching goal focuses on the ensuring retention of girls in schools and enhancing learning opportunities through MLL.

The evidence projects inevitable high economic and social costs for emerging economies in the future due to climate change and indicates an urgent need to develop their ability to cope with these risks. Given the dependence of rural communities on the natural environment, they are the most vulnerable to climate shifts within these regions and face considerable risk to their infrastructure, livelihoods, and quality of life. Unless targeted adaptation measures and response strategies are developed to reduce their vulnerability to climate-induced emergencies, it would not be possible to build the resilience of emerging economies by 2030. This goal can be only made possible through salient actions on investing in girls' education and empowering girls as change agents through climate-focused learning outcomes, which would serve to increase the collective capacity of these communities to develop and implement the required solutions.

In this regard, 60 Million Girls and their implementing partners can play a crucial role in empowering young girls to realize these environmental outcomes. The organization's current mandate to support the retention of girls in schools in tandem with efforts to improve the structure, nature and content taught within those schools is the critical combination of efforts needed to set girls off on these paths of change. A focus on these dimensions has the capacity to foster girls' climate participation and leadership, develop girls' green life skills, and promote their reproductive rights. In turn, this will improve the lives of girls and prepare them to lead their communities to effectively address and navigate climate events. Given the present high rate of school dropouts in rural communities and the lack of requisite knowledge and skills to cope with extreme climate events, there is a compelling case for 60 Million Girls and its partners to build the resilience of rural communities by ensuring greater retention of girls in school and enhanced climate-focused learning in locally-relevant context. In order to achieve this, they must take rigorous steps to critically analyze their existing practices and work in collaboration with associated sectors. The remainder of this report outlines these steps for both 60 Million Girls and its partners.

RECOMMENDATIONS

The following recommendations are segmented across two key implementation groups: 60 Million Girls and its partners or those projects funded by 60 Million Girls.

RECOMMENDATIONS FOR 60 MILLION GIRLS

These recommendations have been developed with the intent to aid 60 Million Girls to sustainably improve their institutional capacity to advance their climate and education-related objectives. The first recommendation encapsulates guidance that is largely focused on improving the operational processes of 60 Million Girls to help advance climate action efforts through girls' education.

Given that 60 Million Girls works with partners and communities on the international level, the second recommendation seeks to further knowledge sharing between 60 Million Girls and international actors working on gender, climate, and education-related challenges. There is an opportunity for the organization to act as a leader in the work to foster collaboration among international actors working on this nexus and streamline research efforts.

Recommendations:

1. Integrate climate considerations into organizational practices and policies to improve the

institutional capacity to help realize climate resilience through girls' education.

It is proposed that this recommendation is operationalized in the following three ways:

A. Develop a climate-focused education and operations policy.

The development of a climate-focused education policy will act as a regulatory framework to guide organizational processes and align climate and girls' policy objectives. This policy will also reflect the organization's commitment to advancing climate action and informing decision-making processes. This will include information on the impacts and opportunities that can be realized through jointly considering climate and girls' education and the potential dangers of neglect or a failure to invest in these matters. The policy will also outline the organization's proposed approach to advancing climate action through girls' education and will reflect the spirit of the remaining recommendations suggested in this report.

B. Integrate climate-related metrics and language into funding applications and project review and proposal processes.

The current project evaluation and review process utilized at 60 Million Girls focuses on reducing gender disparity in school enrolment and improving the quality of education so that children who are in school can learn. Adding climate-related metrics to the existing project review process will bolster the proposal evaluation process and ensure that future projects reflect the organization's renewed commitments to climate action. This will enable 60 Million Girls to evaluate the implications and significance of climate change on its projects and broader mission and ensure the long-term sustainability and impact of interventions. Through this 60 Million Girls is committing to examining in its project proposals how funded projects are contributing to climate resilience and helping to deliver on the United Nations' Sustainable Development Goals.

C. Add climate-related considerations and language to the webpage and communications materials.

The existing 60 Million Girls' webpage or public communications does not explicitly reflect a commitment to advancing climate objectives through girls' education. Integrating climate-related considerations into the organization's communications materials will ensure that there is a formal recognition and clear understanding of the significance of climate change and how this directly relates to the organization's mission to advance girls' education. It will also demonstrate to external stakeholders, the recognition of the important role of the climate agenda, and the organization's commitment to addressing relevant and critical issues.

Relevant Frameworks and Resources

There are a number of existing policies and action plans that 60 Million Girls can draw from in developing their own climate-related policy and communications. For instance, the *United Nations Framework Convention on Climate Change* is the central policy instrument that guides many present national climate action directives and frameworks. It is also advisable for the organization to directly reference Canadian-based strategies. A focus on Canadian examples and best practices reflects the status of 60 Million Girls as a Canadian-based charity that likewise funds other Canadian-based organizations



operating internationally. To this effect, the Government of Canada's *Partnering for Climate* funding initiative may be an especially useful information source. The initiative emerged through consultations with Indigenous peoples and representatives from domestic and international civil society organizations, academia and the private sector and echoes many of the core findings reflected in this report. The central objectives of this work are also captured within the environment and climate action section of Canada's *Feminist International Assistance Policy*— a secondary resource that may aid the development of an organizational policy and communications. The *Canadian Approach to Innovative Financing for Sustainable Development* as well as the Global Affairs Canada's guidelines on results-based management for international assistance programs provides additional information that can help enhance proposed evaluatory processes. These tools represent a fraction of the available information sources that 60 Million Girls can draw on as they integrate climate considerations into their operations and decision-making.

2. Foster international collaboration through multi-stakeholder dialogues and a central repository to facilitate knowledge sharing between international organizations and funders on the issue of girls' education and climate resilience.

60 Million Girls should consider organizing a bi-annual virtual round-table session with diverse stakeholders working in the gender, education, and climate nexus to foster knowledge sharing and collaboration. The team should commit to highlighting the contributions of Indigenous leaders, women and girls, people with lived experience, local actors in the regions that 60 Million Girls/its partners work in, and beneficiaries of 60 Million Girls' work by giving diverse stakeholders a seat at the table. The key takeaways from these discussions and international best practices can be compiled and published and stored in a centralized repository. Currently, 60 Million Girls organizes and executes quarterly meetings with its international partner organizations; this practice has equipped the organization with the capacity to organize virtual discussions on the global scale.

The knowledge hub is a centralized digital platform dedicated to collaborating and exchanging information with international actors to accelerate cross-sectoral knowledge sharing, improve transparency, advance climate- and gender-related outcomes and objectives, and prevent the duplication of research efforts. 60 Million Girls is well placed to manage and collate relevant resources and information from partners and incorporate international best practices and global standards into organizational-level policies and programming. In its initial form, this open-sourced knowledge hub can exist as an embedded sub-domain on 60 Million Girls' existing website. The centralized platform can contain the following core elements: searchable research/literature library, emerging research, content created by subject-level experts (publications, social media posts), and articles in the news. The online platform will offer a centralized and accessible location to house this information, and the meeting minutes from the bi-annual virtual round-table sessions. Recently, 60 Million Girls created an e-newsletter that is to be circulated among its partner organizations around the globe two to three times per year. This e-newsletter is already available on the 60 Million Girls website, but to streamline knowledge-sharing efforts, the content from the newsletter that addresses the nexus can be extracted and published onto the centralized online platform as well.

RECOMMENDATIONS FOR 60 MILLION GIRLS' PARTNERS

The recommendations for 60 Million Girls' partners are concentrated on addressing challenges faced by schools as well as ensuring a working relationship with communities and governments. The engagement with communities aims to achieve retention of girls in school by obtaining buy-in from community members, family members, and local leaders. Moreover, by engaging with governments, partners can share community best practices to contribute to creating national policies on climate action with due emphasis on issues of gender inequality through greater attention to quality, empowering, and transformative education for girls.

At the same time, schools can be used as a center of learning for students and the wider community. Ensuring climate resilient school infrastructure serves as a learning opportunity for students as to how to cope with climate change while improving the infrastructural capacity of schools. Likewise, we can prevent girls from dropping out of school by ensuring gender-responsiveness of the school infrastructure. Schools can also be used as a teaching center for members of the community to develop their familiarity and ownership of school-related processes and realization of the importance of continuous girls' education in combating the most pressing issues including climate change.

Recommendations:

3. Engage with local NGOs and governments to address barriers to gender equity for climate resilience.

60 Million Girls partners should routinely engage with local NGOs to extend the work that they are committed to, in tandem with the needs of the community. The collaboration with local NGOs should involve setting up a local steering committee to avoid working in silos and align their strategies to support communities and advance coordinated efforts taking forward the mandate on the nexus of girls and climate change. Partners, alongside the steering committee, should also periodically engage with relevant government agencies to share lessons learned from the community to inform government policies and actions. Periodic meetings, conferences and workshops should be held with government officials and policymakers to advocate for integrating the role of girls and girls' education towards climate resilience. At the same time, there is a need to accelerate efforts to integrate gender-focused climate change education into the school curriculum and ensure that adequate attention is given to adaptation measures. Efforts must be made to ensure that such curriculum changes are timely approved by the state governments. Partners should share best practices on gender-focused climate learning that could be adopted and scaled up by the government. Materials and content should also be shared with the government for adaptation and wider use in other schools.

4. Develop “green” standards for schools adopted and/or built by 60 Million Girls' partners to create the most appropriate possible environment for learning in a climate adaptive and resilient community.

Ensure the adoption of global best practices for the construction and rehabilitation of “green” schools which represent the best value of expenditure while creating the most appropriate possible

environment for learning in a climate adaptive and resilient community. Some of the primary areas on which the standards must be developed, at the outset, are recommended as follows:

A. Develop climate-resilient infrastructure, including WASH facilities

School infrastructure must be built to withstand climate shocks, conserve energy and water and ensure natural light, air circulation while ensuring a conducive environment for learning and development. Through careful design and planning, schools should include the following:

- I. School location and design – New schools must be located in areas of low risk and designed to withstand both extreme weather events and account for potential incremental environmental changes in the long term. Some of the adaptation features of the school must incorporate elements of ‘green’ school design (e.g., rainwater harvesting, bi-digesters, minimizing waste, etc.)
- II. School energy use – Schools must incorporate energy conservation strategies such as more efficient lighting, insulation and alternative sources of power such as solar. The introduction of low-carbon technologies can also promote positive impacts on education.

School construction to minimize environmental impacts



In Bhutan, it takes almost 3 years to complete a full traditional school in remote areas, which requires high consumption of sand, stone and timber. In 2003, Danida consultancy services helped devise alternative construction methods for schools, which led to the pilot phase of the new light gauge steel frame construction technology, which is now being used for the construction of World Bank-funded schools under the Education Development Project. It is estimated that the technology will lead to a 25% reduction in timber usage compared to traditional designs. Stone and sand requirements along with excavation work will also be reduced, as the new buildings will be only 10% of the weight of traditional classrooms. Construction time will be 33% of the average normal time. The implementation of the new technology will also employ over 200 specially trained Bhutanese graduates from the National Technical Training Authority.¹¹⁵

- III. WASH facilities in schools – Given that children spend a significant portion of their day at school, provision of adequate clean drinking water, sanitation and hygiene (WASH) must be ensured in the school premises which would positively impact student learning, health, and dignity, particularly for girls, given their menstrual hygiene needs.
- IV. Transportation for girls – The provision of safe and reliable transportation for girls attending school must be ensured even during periods of climate stress. This could be in the form of girls-only buses or bicycles and would ensure their continued education, even post extreme weather events.

Cycling to School Increases Girls Secondary School Enrollment Rates in India

An innovative program in the Indian state of Bihar aimed to reduce the gender gap in secondary school enrollment by providing girls who continued to secondary school with a bicycle to improve access to school. It was found that the cycle program increased girls' age-appropriate enrollment in secondary school by 32% and reduced the corresponding gender gap by 40%. The increases in enrollment mostly took place in villages that were further away from a secondary school, suggesting that the mechanism of impact was the reduction in the time and safety cost of school attendance made possible by the bicycle. The cycle program was much more cost-effective at increasing girls' secondary school enrollment than comparable conditional cash transfer programs in South Asia.¹¹⁶



B. Train the teachers on local environmental and climatic conditions, associated risks and management strategies.

Periodic teacher training must be conducted to enhance educators' knowledge and skills in key content areas and in learner-centered, participatory and inclusive instruction, in order to address climate change. This may include innovative strategies such as activity-based and problem-based learning, and techniques such as case studies, simulations, and role-playing; that can engage pupils in the process of identifying issues, seeking solutions, carrying out actions, and evaluating impact. These would encourage learners to inculcate critical thinking and problem-solving skills, and a deeper understanding of the complex and multidimensional nature of climate and environmental change.

5. Design and implement climate and gender-focused supplementary curriculum to address gender gaps and cultivate pro-climate decision-making and leadership to address gender gaps and cultivate pro-climate decision-making and leadership:

In recognizing partner limitations to influence state-managed curriculum, a supplementary curriculum must be designed and incorporated into the Remote Area Community Hotspot for Education and Learning (RACHEL) which are managed and developed by 60 Million Girls, its partners and community members. The modules included in the RACHEL can help to impart knowledge of local environmental and climatic conditions to students, which will in turn aid in risk management and foster innovative and transformational decision-making. These may include lessons on local climatology and weather patterns, assessment of locally-appropriate coping mechanisms and adaptive strategies to deal with climate change, identifying sources of environmental pollution and resource degradation in their area and learning about strategies to address them, etc. Additionally, the curriculum should focus on inculcating 'green life skills' where individuals make greener decisions and engage in greener behaviours in a wide variety of contexts; and 'skills for green transformation' where green skills such as disruptive thinking enable individual and collective climate action. The teachers could be trained to impart these skills and knowledge to students.

To ensure wider dissemination of these learnings and practices outside of school, the content must also be developed in local languages. This can enable a wider receptivity of pertinent information by families and communities.

How an Indian Comic Book Is Teaching Girls About Their Periods

The *Menstrupedia Comic* is a colourful, fun, and accessible guide to menstruation, following the journey of three young girls and their experiences with periods. Each character represents a stage of adolescence: girls who haven't started their period yet and want to learn more about them; girls who have just started their period and want advice on how to prepare for them; and girls who have had periods for some time and might be curious about the myths surrounding them. The comic, aimed at girls ages 9 and above, has since been integrated into the curriculum of 70 schools across India and translated into 11 languages. Adapted from real-life experiences, the comic book is made inclusive with myth-breaking and period positivity strategies. Both the online and comic book content has been reviewed by medical professionals to ensure its accuracy; this is an important consideration given the fact that 88% of girls and women in India who menstruate use unsafe materials.¹¹⁷



Natural resource mapping in Rwandan secondary schools

Under the Rwandan upper secondary education, a two-year project in 2013 created a science and technology curriculum for natural resource mapping experiences. Teachers and students were trained on using tablet computers and smartphones for performing mapping projects with geographic ICTs. The project leveraged the mobile phone network in Rwanda, helping to connect students and teachers to the environment in their districts. In doing so, it supported the use of new technologies in education as well as increased students' and teachers' awareness of local environmental and climate change issues.

The project outcomes included:

- ❖ Students show increased spatial thinking ability as evidenced via mean test scores.
- ❖ Students show improvement in knowledge of geographic ICT concepts.
- ❖ Teachers can incorporate geographic ICTs into their teaching practice to supplement the earth science curriculum.
- ❖ New open source geographic ICTs are created for use in Rwanda.¹¹⁸



Community-based instructional learning in Nigeria

In one study with 265 students in Oyo Town, Oyo State, Nigeria, experiential learning approaches were used to help students understand and address local environmental problems—from deforestation to desertification. This was grounded in using the local community and environment as a starting point for teaching concepts in language arts, mathematics, social studies, science, and other subjects in the curriculum. Students were engaged in service-based learning strategies that required them to solve problems within their schools and communities as part of their academic studies. In addition, the community-based instructional learning approaches also involved increased educational trips that took learners out of school to places where they could observe climate challenges firsthand and study in a real-life setting.

These students were found to perform significantly better than those in the control group on a large number of measures ranging from environmental knowledge to skills needed to solve immediate and future environmental problems. Program outcomes also revealed that



emphasizing hands-on, real-world learning experiences can increase students' academic achievement, develop stronger community ties, enhance appreciation for the natural world, and create a heightened commitment to active citizenship.¹¹⁹

6. Enable schools to serve as community resource hubs to empower community members to be climate-resilient.

To enhance the engagement of the community with schools, the educational services and resources can be leveraged for them. This would build familiarity and trust in the education system and invite their interest in sending their girl child to school to translate the learning from schools to building the family's resilience to climate change.

Here are some meaningful ways of engagement with the community:

A. Host information sessions at schools for community education.

Information should be focused on the following areas:

- I. Knowledge of flood and drought-resilient seeds could be demonstrated through community gardens; information sessions on recycling and water harvesting can be disseminated through creative means such as awards for climate action; inviting ideas of indigenous community resilience through competitions, community-wide clean-up campaigns; and girl-led climate action documentaries and training workshops could be conducted.
- II. Existing superstitious beliefs and social norms deprive women and girls of education, opportunities for decision-making, and potential leadership roles as climate champions. Overarching gender inequality issues relating to early marriage and the role of men and boys in supporting their cause can also be addressed in these sessions, inviting healthy discussions and clarifying questions.

Empowering leaders at Colégio Israelita Brasileiro A. Liessen in Brazil

Colégio Israelita Brasileiro A. Liessen is working to create a culture of environmental responsibility. The school believes that everyone in the school -800 students and 200 employees - should know why environmental projects are taking place. Also, everyone should feel like they are part of the process. To this end, the school's environment team has invited janitors, teachers, students, engineers and others to participate in experiential, non-formal learning activities. They created a green roof, built solar ovens and bamboo bicycle racks, planted spice, flower, and meditation gardens, and converted used cooking oil into biodiesel. These activities have created bonds between different members of the school community, awakened a sense of belonging and pride in the school, and built an environment where ideas and information are shared freely. The environment team has also offered training for school community members in order to secure buy-in for the projects. For example, training on waste sorting and cooking oil collection was offered to employees. Also, a gardening workshop was organized for student volunteers, so they could assist maintenance staff in caring for the expanding school gardens.¹²⁰



Women as community leaders and seed conservation and agroecology experts in India

The project "Seeds for Hope" improves the climate resilience, food sovereignty and economic autonomy of farming communities (20,000 people) in the valley of Dehradun, in Northern India, relying on women's traditional knowledge and action. They are trained to reproduce and conserve local seeds and learn agroecological techniques and food transformation, which reinforces their power to make decisions.



The project promotes the key role that women play in subsistence farming and family nutrition in rural India. As owners of knowledge, conservation actors and distributors of seeds, as well as trainers in agro-ecology and micro-savings, women have gained a local political role, and their living conditions and financial autonomy are improved. To date, Navdanya has set up 150 community seed banks in 22 states of India, conserving more than 4000 rice varieties. The central seed bank has 119 varieties which are climate resilient including flood and drought-tolerant rice varieties. The project has proven that the diversity of crops increases the resilience of farming to climate change.¹²¹

- III. Vocational skills training for students can be leveraged for community members, especially women who had to discontinue their education, providing them with a second chance at restoring their livelihood. Through these initiatives, even in the aftermath of an extreme weather event, they can continue to have a steady source of income.

60 Million Girls' MLL can be used as an educational tool to impart information to the adult members of the community. The RACHELs can be customized in accordance with the learning requirements of these adults. The community members can leverage MLL at the school premises at a time convenient to them (during school hours). Through this medium, they can access the recorded version of any earlier training/workshop recordings.

Al-Kawthar Secondary School's Continuous Process of Improvement in Lebanon

Al-Kawthar Secondary School set out to raise awareness of climate change within their school. So far, 2,421 students, 310 teachers, and 110 families have been involved in projects including tree-planting, making handicrafts from recycled materials, visiting national forests, recycling, and conserving water. The school also hosted film nights and workshops where students, families and teachers suggested ways to save the planet. At the beginning of the school year, the environmental committee develops an action plan based on what was learned and achieved the previous year. The committee keeps a record of their activities, so the school can identify high-impact activities and activities that could be scaled up. Teachers and students deepen their learning by sharing their experiences with other schools in Lebanon and around the world. Families are kept engaged thanks to leaflets informing them of new developments and projects.¹²²



B. Post information on climate bulletin boards that act as early warning systems in schools:

Partners can work in collaboration with other local NGOs and community members to develop climate bulletin boards. These would be aimed at providing information on impending events of extreme weather-related and operate as a credible source of information. Such an arrangement would require the local government's engagement throughout the process. Under their discretion,

schools can be leveraged as a safe shelter in the aftermath of a climate-related event with the provision of gender-responsive relief material and information on further developments.

7. Leverage existing women and girl-based groups and leadership structures to serve as climate champions.

60 Million Girls' partners and local NGOs can collaborate to leverage any existing women and girl-led leadership to focus on the impact of climate change. Partners can leverage their role to sensitize the community, these groups can further take charge of conducting similar workshops for community members at school or at other community settings. The focus of these workshops and training would be on sustainable adaptation and mitigation strategies to climate change, meaningful engagement with the community, their role in decision making and contribution to building gender-sensitive and climate-resilient communities. These groups can include women-led self-help groups, youth groups, environment clubs, student parliaments, women farmers and women community leaders (for example *Panchayat* system in India).

For effective implementation of these programs, adolescent boys and men must be partly or fully involved in these workshops.

Training rural women and women Panchayat leaders to adapt to climate change in India

Given the important role of women in climate change mitigation and adaptation, there is a great need for enhancing the capacity of rural women and elected women Panchayat leaders to help communities adapt to climate change and ensure food security. To train women leaders, the Training of Trainers (ToTs) Summary Manual on Gender, Climate Change, Agriculture and Food Security was prepared by Alternative Futures. A ToTs workshop of 1.5 days was conducted in Patna for 50 rural women leaders from Mahila Samakhya (MS) and elected women PRI (Panchayati Raj Institutions) members from various districts in Bihar. They further trained PRI leaders and MS members in 17 other districts. The training focused on making climate change relevant to women leaders by relating to their lives and livelihoods. The linkages between climate change, agriculture, and food security were deconstructed and the science of climate change was explained but with examples that they could connect with. Similarly, government programs and schemes that could help women adapt to climate change impacts on their farms, their kitchen gardens, their poultry, and their fish were discussed at length. The training also focused on how the women could access and benefit from the government schemes. The training helped the rural women leaders, especially elected leaders on local self-governance structures, as they can now use the knowledge in their local areas to train other women on improving food security.¹²³



8. Conduct an environmental scan of existing government policies and programs on education, climate, and gender to reflect community-based needs and broader commitments to recognize girls' education as a path for climate resilience

Partners should conduct an environmental scan of government policies by identifying international and national commitments that have been made by their respective governments regarding gender, education and climate and their implications on government policy and implementation. Partners should then look for national plans of action with specific targets and evaluate the progress made

in achieving the goals and identify any gaps. Apart from that, the environmental scan should present recommendations that lead to improvements in the design, implementation, and results of government programming, contributing to better gender, education, and climate resilience outcomes. Review reports should be communicated to the government (ministries, departments, or agencies) through annual publications and should be made available to the public through partners' websites.

IMPLEMENTATION STRATEGY

The implementation strategy assesses the feasibility of each recommendation and provides an overview of the potential resource considerations as well as the steps needed to realize the proposed actions and amendments. The strategy also includes additional project management tools attached in the annexes that depict, among other things, estimates for start and end dates for the proposed activities, major milestones, and dependent tasks and contingencies. The annexes also include a detailed logic model that provides a visual representation of linkages between the proposed activities and recommendations and the central policy objective of enhancing countries' resilience to climate change through girls' education. The logic model summarized the crux of the policy report and helps key implementers establish a common understanding of the goals and indicators of success in the short and long term and determine areas where added support may be needed. These tools broadly reflect the multifaceted nature of the proposed actions and implementation groups and are collectively intended to enhance the adoption, implementation, and sustainability of the proposed actions.

Overarching feasibility considerations

On the whole, the implementation of these recommendations is contingent on the availability of dedicated resources. As part of this, 60 Million Girls may need to consider upscaling their financial resources beyond the current allotments per project and/or consider transitioning away from being a strictly volunteer-based organization. Added compensation can ensure that staff are better able to dedicate the time and resources needed to concretely and sustainably progress work on the linkage between girls' education and climate change.

These recommendations also cumulatively require 60 Million Girls and the agencies they fund to concretely analyze the climate-related implications of their efforts to advance girls' education. Additional recommendation-specific considerations are outlined as follows.

RECOMMENDATION 1: Integrate climate considerations into organizational practices and policies

The proposed policy and associated communications should define the core purpose and value of this nexus, identify the scope of its application, outline the implicated stakeholders and include relevant contextual data and key definitions (e.g. what does climate resilience mean). In addition, policies and communications on this nexus should outline both recommended and mandatory requirements for 60 Million Girls and organizations seeking funding to abide by when undertaking work related to advancing girls' education and climate resilience.

It is advised that these materials be developed in consultation with key stakeholders and experts that are well-versed in policy development processes as well as the impacts and realities that underpin environmental resilience work. For this reason, it is recommended that 60 Million Girls

consider reflecting the voices of those most impacted by their work and climate disasters in their policy. This will improve the representativeness and effectiveness of the language, metrics and policies adopted by the organization. This can be done by leveraging pre-existing relationships with partners.

It is also recommended that these materials are considered ever-green documents that are subject to periodic reviews and updates to ensure they remain relevant and cogent.

RECOMMENDATION 2: Coordinate multi-stakeholder dialogues and develop knowledge-sharing mechanisms

Implementing the bi-annual virtual roundtable discussions will require 60 Million Girls to decide on the technology platform (e.g. Zoom); enable accessibility features (translations, closed captioning, ASL (American Sign Language) interpretation); record the meeting (in order to take thorough notes and make it publicly available online if they choose to do so); ensuring participants have sufficient time to register; and extend the invite to individuals and organizations beyond the current networks of 60 Million Girls in order to make equitable space for community organizations, local leaders, knowledge holders, and individuals with lived experience pertaining to this nexus in countries around the globe.

Creating and implementing a centralized digital platform for contributions from global subject-level experts, knowledge holders, researchers, and organizations will require 60 Million Girls' R&D (Research and Development) team to add a subdomain on their existing website; prepare, search for, and collate blog posts, research, literature, news articles, etc.; extract relevant content from 60 Million Girls' past newsletters; optimize the platform for SEO (Search Engine Optimization); integrate analytics to monitor traffic and engagement; share the platform with their networks.

RECOMMENDATION 3: Engage with local NGOs and the Government

Collaboration with local NGOs requires the creation of a steering committee that enables coordination between the works of the different NGOs. Partner organizations should coordinate with stakeholders to select individual members of the steering committee based on expertise and depth of experience working on the nexus between gender, education, and climate change. The committee could be established based on a memorandum of understanding agreed between the NGOs to define the responsibilities and functions of the members of the committee.

At the same time, partners should coordinate with government agencies to establish a regular bi-annual meeting (workshop or conference) with government agencies (Ministries or local government offices) to share lessons learned from the community and advocate for recognition of the nexus in government policies.

RECOMMENDATION 4 & 5: Develop green standards and climate and gender-focused supplementary curriculum

The development and implementation of green standards for schools would require dedicated funding and extensive planning involving government officials, relevant experts and community members. This would include activities such as selecting appropriate locations for schools,

conforming to standards on green school design, ensuring adequate transport options for girls connecting all remote areas, etc.

In order to ensure the retention of girls in schools and high-quality climate-focused learning outcomes, greater programming attention needs to be given to the recruitment of female teachers in schools, especially for STEM courses. This can be effectively done through partner collaboration with state governments or by highlighting the urgency through an environmental scan of their policies. Additional female teachers would need to be hired who can be trained to impart a climate-focused curriculum across STEM courses. Having more female teachers would not only inspire young girls but also have a wider impact on gender relations in the community.

RECOMMENDATIONS 6 & 7: Enable schools to serve as community resource hubs and leverage existing women and girl-based groups and leadership structures in communities.

Schools can be utilized as community resource hubs with the support of trained teachers and MLL technology. These resources can be leveraged as means to share knowledge and develop the skills of all stakeholders including children and community members. This will enable them to act through a gender-responsive approach to climate change. They can leverage this knowledge to build familiarity with the community through which communication can be enhanced in the time of an extreme weather-related event, to communicate early warning signs and information.

The women and girl leaders can be sensitized through the efforts of 60 Million Partners who can, in turn, undertake the responsibility of sharing these practices and skills with other community members. These workshops and training can be conducted within the school premises and build interest, engagement and familiarity of community members to learn, sustain livelihoods and develop long-term resilience against climate change.

RECOMMENDATION 8: Conduct an environmental scan of government policies and actions

Conducting an environmental scan of government policies and plan of action involves several steps. The first step in the process is to select and define a topic. In many cases, the selection of topics is done as part of an office's long-term or strategic planning process. After a topic has been selected (and approved), the scan planning phase begins. The main result of this phase of the environmental scan is the scanning plan, which usually includes the objectives, scope, criteria, and evidence collection and analysis methods. Then, the examination stage will take place. In this stage, data will be analyzed, and findings will be identified. The final stage involves reporting conclusions and recommendations. Reporting the results of environmental scans of government policies and plans of action on gender, education and climate is similar to reporting for other types of audits. As with any environmental scan report, it is important to consider how findings can best be presented to achieve maximum impact, present a persuasive case for positive change, and reduce the potential for misinterpretation of observations and conclusions.

RISKS AND OPPORTUNITIES

Problems with cost-benefit analyses for climate action

While cost-benefit analysis (CBA) is preferentially used to make challenging government decisions for incremental change, it is ill-suited to quantify and capture the depth of issues at the

scale of climate change. In dealing with the risks, uncertainties, and major disruptions caused by the changing climate, CBA tends to overestimate the costs and underestimate the benefits of related policy decisions.¹²⁴ In addition, it discounts nearly all of the important and widely recognized physical, ecological, and economic impacts of climate change. This is because most conventional macro-economic models are not equipped for the degree of transformative change needed to capture and address an issue as complex and intersectional as this one. There is a need to expand the CBA-climate policy model to recognize the social costs of climate change that can be difficult to quantify (e.g. human health, cultural identity, livelihood security, migration, water security).¹²⁷, the distinctions between costs and investments and the¹²⁵ risks of inaction¹²⁶ Decisions that rely solely on CBA could underestimate probable damages arising from climate change, therefore contributing to poorer economic outcomes overall.¹²⁸ As such, it is worthwhile to explore other policy decision-making tools including risk-opportunity analysis and social cost dimensions. This paper identifies the potential risks and opportunities that arise from each recommendation. The analysis concludes with a list of mitigating factors to address salient risks. This is done in the hopes of minimizing the occurrence of risks and uncertainties and bolstering efforts to achieve improved climate and gender-based, economic, and societal outcomes.¹²⁹

Cross-cutting risks

There are underlying risks that cut across all of the proposed recommendations and can threaten the success of this work. The nature of the relationship between 60 Million Girls, their Canadian partners, and their operations within emerging economies is of significant importance here. Efforts to promote gender equality, climate action, and the empowerment of women and girls must recognize the central role of race and colonialism in global affairs and respect the autonomy of non-western nations and actors to the greatest degree possible. This is vital to avoiding the perpetuation of harmful inequities that amplify climate risks and affect the ability to respond and adapt to the impacts of climate change. Beyond this, it is also critical to ensure that there is sustained momentum in the operationalization of the proposed activities. The conscious and explicit difficulties associated with advancing gender equality and climate action as well shifts in priorities may reduce the commitment and motivation needed to achieve these objectives. In addition, the absence of shared definitions and the significant variance of understandings on critical climate-related terminology, both internationally and across sectors, may undermine collective action efforts and impact the efficacy of revised communications and policies. Finding ways to address these risks and remain dedicated in the pursuit of these actions is imperative.

1. Integrate climate considerations into organizational practices and policies to improve the institutional capacity to help realize climate resilience through girls’ education.

Opportunities	Risks
----------------------	--------------

<p>Improving policies and procedures will save the organization time and resources as they serve as precedents that guide organizational actions, facilitate decision-making and streamline internal processes.</p>	<p>At the present time, 60 Million Girls does not currently have any established organizational policies. The organization's success in the absence of clearly defined policies may undermine efforts to develop an organizational policy on climate and adversely affect uptake rates and adherence to the policy post-development.</p>
<p>Amendments to the project proposal and review process create a supplementary channel for current data on the relationship between climate change and girls' education. This can enable the organization to better understand present challenges and adapt their processes accordingly to help effectively problem-solve.</p>	<p>Given the voluntary nature of the organization, the proposed recommendations may present added operational burdens on an already strained team and protract the projected timelines and delivery processes.</p>
<p>These recommendations advance the Government of Canada's broader international commitments to address climate change through international development and contribute to the UN's SDGs.</p>	
<p>Alignment with current national and international climate priorities is likely to make organizations eligible for alternative funding pools and extend their potential revenue streams, thereby facilitating the organization's capacity to advance its mission.</p>	

2. Foster international collaboration through multi-stakeholder dialogues and a central repository to facilitate knowledge sharing between international organizations and funders on the issue of girls' education and climate resilience

Opportunities	Risks
<p>Center the voices, needs, and ideas of women and girls, Indigenous leaders, people with lived experience, local actors in the regions that 60 Million Girls/its partners work in.</p>	<p>Roundtable discussions may be susceptible to hijacking where certain groups or individual participants take the meeting off-topic and/or pursue an alternative agenda.</p>
<p>Drawing traction to 60 Million Girls' website and subdomain and increasing key actors'</p>	

familiarity with their leading work in the field.	
Accelerate cross-sectoral knowledge sharing, improve transparency in work efforts, and advance climate- and gender-related outcomes and objectives.	Retaining participants' interest in the domain; a loss of momentum to participate in and contribute to multi-stakeholder dialogues over time.
Ensure that resources are accessible to the wider public and parties interested in better understanding and advancing this work. Prevent the duplication of research efforts.	The nature of existing funding streams requires demonstrating some ownership over, or experience/cultural competence in relation to one's work. This may encourage certain groups or individual participants to view others as 'competitors' and continue operating in silos to secure funding rather than working collaboratively to break them down.

3. Engage with local NGOs and governments to address barriers to gender equity for climate resilience

Opportunities	Risks
NGOs usually possess expertise that governments often lack. 60 Million Girls' partners (and other local NGOs) have a thorough knowledge of the nexus between gender, education, and climate issues. Partners can help governments to adopt effective policies regarding the nexus.	A government might be wary of NGOs which are highly dependent on foreign funds and therefore might impugn their motives as "guided by a foreign hand."
By building a working relationship with governments, 60 Million Girls' partners may benefit from trust and credibility among the general public - an endorsement from the government will provide more credibility to some of their activities and possibly lead to gains in their reputations.	
Engagements with local NGOs and the government does not require significant costs and therefore could have no immediate implications for the allocation of organizational budget	Some governments may be hesitant to build a relationship with NGOs because such relationships may bring more transparency and accountability.

4. Develop “green” standards for schools adopted and/or built by 60 Million Girls partners to create the most appropriate possible environment for learning in a climate adaptive and resilient community.

Opportunities	Risks
The intervention would lead to sustainable and gender-sensitive school buildings	Enrolment rates for adolescent girls may not increase despite these interventions, owing to prevalent gendered social norms and practices.
WASH facilities and transportation avenues would promote greater retention of girls in school	<ul style="list-style-type: none"> Teachers may not be willing to undertake the training programs owing to factors such as aversion to change, fear of eventually being replaced by the new technology, etc.
Energy conservation practices of schools may eventually spread and be adopted in the wider community	

5. Design and implement climate and gender-focused supplementary curricula to address gender gaps and cultivate pro-climate decision-making and leadership

Opportunities	Risks
Enhanced knowledge and skills of students and their families to cope with disasters and extreme weather events	The supplementary curriculum may not be supported by the state/provincial government authorities.
Increased enrolment of girls in STEM education	Incorporating international best practices into the supplementary curriculum may not be relevant in certain local contexts.
Increased receptivity by community members of all ages and gender due to content in the local language	

6. Enable schools to serve as community resource hubs to empower community members to be climate-resilient.

Opportunities	Risks
Enhanced understanding of the community toward climate-friendly and gender-sensitized practices on combating climate change.	Local governments may not endorse the idea of leveraging schools as shelters or hosting early warning systems.

Build familiarity and trust in the knowledge disseminated through schools.	Competing interests of local NGOs may result in dis-jointed efforts. This could lead to the community members slowly dropping out of the workshops/training.
Extend the scope of the provision of educational opportunities for women and girls given the unforeseen circumstances of either climate change or gender inequality.	
Schools are leveraged as the most credible source of information on any impending extreme weather events, in the community.	

7. Leverage existing women and girl-based groups and leadership structures to serve as climate champions.

Opportunities	Risks
Provide focused advice and motivation and empower women and girls in the community to take meaningful action on climate change.	Given the existing harmful societal norms, these women and girls might be targeted with acts of intimidation and reprisals.
Women and girls of the community becoming climate champions.	

8. Conduct an environmental scan of existing government policies and programs on education, climate, and gender to reflect community-based needs and broader commitments to recognize girls' education as a path for climate resilience.

Opportunities	Risks
Determine the degree of government compliance with national and international commitments to gender, education, and climate change.	In some areas, the knowledge required to determine the gender impact of government policies and make practical recommendations is very specialized. This depth of knowledge may not be available among all 60 Million Girls' partners.
Identify and examine the gender-specific impacts of government programs.	
Make recommendations that lead to improvements in the design, implementation, and results of government policy and programming, contributing to better gender-sensitive education and climate change policies.	Governments could be reluctant to act because they may not want to channel their already limited resources to these policy areas.

Mitigating Factors

The analysis demonstrates that there is minimal risk with the adoption of the recommendations that are primarily within the purview of 60 Million Girls. The operationalization of these actions over the course of an extended period of time also preserves the operational efficiencies of the volunteer-based organization with minimal service disruptions. There are added risks and uncertainties raised with recommendations for partners as the implementation of these actions requires coordination across sectors and between various key actors, and rests largely outside the immediate purview of 60 Million Girls. To this end, the project has explored mitigating strategies to enhance the feasibility of all the proposed activities. A summary of these alleviating factors and techniques is listed below.

Stakeholder collaboration and endorsement: Issues with the feasibility or relevance of these recommendations have been pre-emptively explored in consultation with staff from 60 Million Girls. Developing the recommendations in partnership with this core decision-making body has helped to preliminarily assuage potential challenges around viability.

Continued education and awareness: The broader risks associated with patriarchal attitudes and power differentials are addressed through the ongoing collaboration, education, and awareness efforts built into the recommendation. Changing the deep-rooted nature of pervasive attitudes requires a package of measures aimed at subverting gender-based misconceptions and problematic stereotypes. All recommendations are developed with the intent to address and circumvent these systematic challenges.

Identify advocates and embed champions: To address the challenges that may arise from uncooperative government agencies, 60 Million Girls partners could identify model government agencies or individuals within the civil service that work alongside partners and advocate to help partners leverage resources, keep momentum, and raise the attention for policies that recognize the nexus between education, gender and climate change. Their dedication to raising voices for gender-sensitive education and climate change policy could inspire other government agencies and drive partners' efforts to continue to make a meaningful impact.

Alternating roles and responsibilities: To reconcile with power imbalances that may arise in collaborative spaces that are dominated by one organization or participant, roles and responsibilities should be alternated on an ongoing basis. In the context of the bi-annual virtual roundtable discussions, while 60 Million girls can remain in an administrative leadership role, different international actors should be given an opportunity to lead discussions, highlight country-specific insights and best practices, and share relevant cultural competencies to expand the group's breadth of learning and diversity of knowledge on the nexus. This will also help to ensure all participants have ownership in cross-sectoral efforts while balancing the need for effective leadership and follow-through.

Reassessing time-frames: Where possible, the time-frames have been adjusted to reflect learning and communication lags and provide organizational staff and partners with the ability to balance the adoption of these recommendations with their other priorities and to implement the proposed measures within a timely and reasonable manner. However, this is contextualized against the backdrop of an urgent climate crisis that has curtailed the ability to extend timeframes beyond

those provided.

Ongoing reviews: All the recommendations include a regular review process by both 60 Million Girls and their implementing partners to assess existing strengths and areas for improvement (see the attached GANTT chart for details). The reviews provide the opportunity to understand the strengths and challenges of each proposed activity and highlight any areas that may need more attention. The timely collaboration of partner organizations with the key actors and agencies in the region would ensure buy-in and effective implementation of the proposed interventions. In addition, the routine review and appraisal processes will ensure that definitions and conceptions of key terms also remain accurate and update-to-date.

CONCLUSION

Climate change is a serious global challenge that we cannot address without working with and investing in women and girls. The evidence is clear: communities are better able to respond to climate-related disasters and address resulting socio-economic instabilities when women and girls have access to 12 years of quality and complete education. Continued education for girls plays an important role in promoting girls' reproductive rights, fostering girls' leadership and decision-making skills, and ensuring that girls are equipped with skills needed to thrive in a "green" economy.¹³⁰

However, girls' education is also one of the most overlooked approaches for strengthening a country's resilience to climate change. From being among the first to be pulled out of school to help respond to climate-related income shocks, to spending hours a day fetching water, especially in times of drought, and having minimal access to WASH facilities, the health, well-being, and futures of women and girls is still being neglected, especially in emerging economies. These negative coping mechanisms increase the vulnerabilities of women and girls in the short- and long-term by directing resources away from opportunities that may otherwise have contributed to positive and lasting individual-, community-, and country-level changes.

The argument in support of girls' education as a climate solution is simple, but the pathways to achieve it are much more nuanced and intersectional. This policy report has outlined a few realistic and concrete ways through which 60 Million Girls and its partners can effectively build the resilience of the rural communities in emerging economies through the powerful instrument of girls' education. For 60 Million Girls, these recommendations ranged from creating a climate-focused policy for the organization, integrating climate-related metrics and language into project proposals, incorporating climate considerations onto its website, and fostering international collaborations through multi-stakeholder dialogues. For the implementing partners across different regions, recommendations include developing green standards for climate-resilient schools, introducing a climate- and gender-focused supplementary curriculum, using schools as information hubs in rural communities, conducting environmental scans of existing government policies and driving actions on this nexus to foster improvements, and routinely engaging with government agencies to share lessons learned. In the event that these proposed steps are not undertaken at this crucial juncture, we risk failing to protect the most vulnerable and preserving a harmful status quo.

While independent groups seeking to address this compounded issue in isolation can make some strides, more cross-sectoral partnerships are needed between organizations, policymakers, and individuals working in girls' education, climate, and gender equality spaces to facilitate and expedite greater progress. Targeted interventions through sustained collaborations among these actors will help reduce the vulnerability and increase the resilience of communities to climate events.

In the pursuit of more equitable climate action, women and girls must be included at all levels of policy and decision-making. When women and girls have the opportunity to complete their education and participate in environmental governance, communities as a whole can achieve more sustainable, equitable, and positive gender-sensitive climate outcomes.

ANNEXES

ANNEX A: ACRONYMS

- ❖ AIDS = Acquired Immunodeficiency Syndrome
- ❖ ASL = American Sign Language
- ❖ CEDAW = Convention on the Elimination of All Forms of Discrimination against Women
- ❖ CADE = UNESCO's Convention Against Discrimination in Education
- ❖ CAMFED = Campaign for Female Education
- ❖ CBA = Cost Benefit Analysis
- ❖ CRC = Convention on the Rights of the Child
- ❖ DRR = Disaster Risk Reduction
- ❖ GHG = Greenhouse Gases
- ❖ COP 26 = The 26th UN Climate Change Conference of the Parties
- ❖ HIV = Human Immunodeficiency Virus
- ❖ HRBA = Human Rights Based Approach
- ❖ ICCPR = International Covenant on Civil and Political Rights
- ❖ ICESCR = The International Covenant on Economic, Social and Cultural Rights
- ❖ ICT= Information communication technology
- ❖ IGO = Intergovernmental Organizations
- ❖ IPCC = Intergovernmental Panel on Climate Change
- ❖ MHM = Menstrual Health Management
- ❖ MLL = Mobile Learning Lab
- ❖ ND-Gain Index = Notre Dame Global Adaptation Initiative
- ❖ NGO = Non-Governmental Organization
- ❖ PRI= Panchayati Raj Institution
- ❖ RACHEL = Remote Area Community Hotspot for Education and Learning
- ❖ R&D = Research and Development
- ❖ SDGs = Sustainable Development Goals
- ❖ SEO= Search Engine Optimization
- ❖ SRHR = Sexual and Reproductive Health Rights
- ❖ STIs = Sexually Transmitted Infections
- ❖ STEM = Science, Technology, Engineering and Math
- ❖ ToTs = Training of Trainers
- ❖ UDHR = Universal Declaration of Human Rights
- ❖ UN = United Nations
- ❖ UN CSW66 = United Nations 66th Commission on Status of Women
- ❖ UNESCO = The United Nations Educational, Scientific and Cultural Organization
- ❖ UNFPA = United Nations Sexual and Reproductive Health Agency
- ❖ UNICEF = United Nations Children's Fund
- ❖ WASH = Water, Sanitation and Hygiene
- ❖ WHO = World Health Organization

ANNEX B: KEY TERMS AND DEFINITIONS

1. **Adolescence:** WHO defines adolescence as the period between childhood and adulthood, from 10 and 19 years of age.¹³¹
2. **Climate action:** Climate action refers to stepped-up efforts to reduce greenhouse gas emissions and strengthen resilience and adaptive capacity to climate-induced impacts, including climate-related hazards in all countries; integrating climate change measures into national policies, strategies, and planning; and improving education, awareness-raising and human and institutional capacity with respect to climate change mitigation, adaptation, impact reduction and early warning.¹³²
3. **Climate leadership:** Taking steps to position oneself on the forefront of the economic and political transitions that accompany the global response to climate change.¹³³
4. **Climate literacy:** Climate literacy is an understanding of one's influence on climate and climate's influence on oneself and society. A climate-literate person understands the essential principles of Earth's climate system knows how to assess scientifically credible information about climate, communicates about climate and climate change in a meaningful way, and is able to make informed and responsible decisions with regard to actions that may affect climate.¹³⁴
5. **Climate resilience:** denotes the preventive, anticipative, adaptive, absorptive, and transformative capacities for managing multiple risks across systems. Climate resilience requires mitigation and adaptation actions that must be combined to tackle the current and future impacts of climate change. Building climate resilience involves all actors (governments, communities and NGOs, private sector actors) having the capacity to anticipate climate risks and hazards, absorb shocks and stresses, and reshape and transform development pathways in the longer term.¹³⁵
6. **Commission on the Status of Women (CSW66):** The sixty-sixth session of the Commission on the Status of Women took place in March 2022. The theme of this conference was to achieve gender equality and empower women and girls in the face of climate change, environmental and disaster risk reduction policies and programs.¹³⁶
7. **Community resource hubs:** Community resource hubs are centers that focus on addressing local needs by helping communities strengthen their resiliency. From a climate, gender and education perspective, community resource hubs can serve as a center for climate literacy and second-chance education.
8. **Disaster risk reduction:** Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.¹³⁷

9. **Early and child marriage:** Child marriage and early marriage largely refer to the same thing, marriage or union, which may be formal or informal, where one or both spouses are under a certain age, typically age 18.¹³⁸ The vast majority of child marriages are between a girl and a man and are rooted in gender inequality. However, early marriage is also sometimes used to describe marriages in which one or both spouses are 18 or older, but with a compromised ability to grant consent.
10. **Emerging economies:** describes low- and middle-income countries. This term is used in place of developing countries and in recognition of the problematic normative assumptions that underlie the conventional term.
11. **Environmental scan:** Environmental scanning is the ongoing tracking of trends and occurrences in an organization's internal and external environment that bear on its success, currently and in the future. The results are extremely useful in shaping goals and strategies.¹³⁹
12. **Experiential learning:** Experiential Learning (EL) is a pedagogical strategy that advances learning, personal growth and competency development by engaging learners directly in the application of theoretical concepts in diverse contexts, and critical reflection on those experiences.¹⁴⁰
13. **Extreme weather-related events:** Occurrences of unusually severe weather or climate conditions that can cause devastating impacts on communities and agricultural and natural ecosystems. Weather-related extreme events are often short-lived and include heat waves, freezes, heavy downpours, tornadoes, tropical cyclones and floods.¹⁴¹
14. **Flood-resilient seeds:** With an increasing number and severity of weather-related disasters, Navdanya works to conserve climate-resilient seeds. These indigenous seeds include flood, drought, salt-tolerant varieties.¹⁴²
15. **Gender inequality (gender gap, gender disparity, etc.):** Gender inequality is discrimination on the basis of sex or gender causing one sex or gender to be routinely privileged or prioritized over another.¹⁴³
16. **Gender-responsive:** A recognition and understanding of the unique needs and priorities, as well as barriers, inequalities, and power dimensions experienced by individuals of a specific gender.¹⁴⁴ In this context, gender responsiveness seeks to reflect gender-specific differences experienced by women and girls in order to increase positive impacts on that population.
17. **Green jobs:** In the United Nations Environment Programme (UNEP) green jobs are defined as "positions in agriculture, manufacturing, R&D, administrative, and service activities aimed at substantially preserving or restoring environmental quality."¹⁴⁵

18. **Green skills:** The skills individuals need to transition to a low carbon, climate-resilient economy, participate in traditional green sector jobs, adopt more sustainable behaviours, adapt to the impacts of climate change and take action on climate justice.
19. **Green standards:** An industry-specific term used to describe minimum requirements or criteria for increasing the environmental benefits and mitigating the environmental harms of any given activity.¹⁴⁶
20. **Greenhouse Gases:** A greenhouse gas is a gas that absorbs and emits radiant energy within the thermal infrared range, causing the greenhouse effect.¹⁴⁷ The main gases responsible for the greenhouse effect include carbon dioxide, methane, nitrous oxide, and water vapour (which all occur naturally), and fluorinated gases (which are synthetic).¹⁴⁸
21. **Human Rights-Based Approach (HRBA):** a conceptual framework rooted in the recognition that inequality and marginalization deny people their human rights and keep them in poverty. An HRBA approach seeks to ensure substantive equality and takes into account the inequalities which lie at the heart of development problems and redresses the discriminatory practices and unjust distributions of power that impede development progress and often result in groups of people being left behind.¹⁴⁹ (See substantive equality)
22. **Intersectionality:** describes the complex, cumulative way in which the effects of multiple forms of discrimination (such as racism, sexism, and classism) combine and overlap, especially in the experiences of marginalized individuals or groups. In the context of this report, climate action and efforts to achieve climate resilience must be intersectional. This means that they must be conscious of the exclusionary history of environmentalism and the legacy of colonization and the disproportionate impacts of climate change on communities of colour.¹⁵⁰
23. **Mobile Learning Lab (MLL):** The MLL consists of a Remote Area Community Hotspot for Education and Learning, or RACHEL, a small server that can hold 1 TB of data, a set of tablets or other user devices, and a solar panel. Learning resources can be uploaded to the RACHEL so that users can access the information through a Wi-Fi connection without Internet connectivity. Content on the RACHEL can be completely customized to meet the needs of the local context.¹⁵¹
24. **ND-GAIN Index:** The ND-GAIN Country Index, a project of the University of Notre Dame Global Adaptation Initiative (ND-GAIN) summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.¹⁵² It aims to help governments, businesses and communities better prioritize investments for a more efficient response to the immediate global challenges ahead.
25. **Panchayats/Panchayati Raj Institutions:** Panchayati Raj is the oldest system of local government in the Indian subcontinent. Panchayati Raj Institutions as units of local

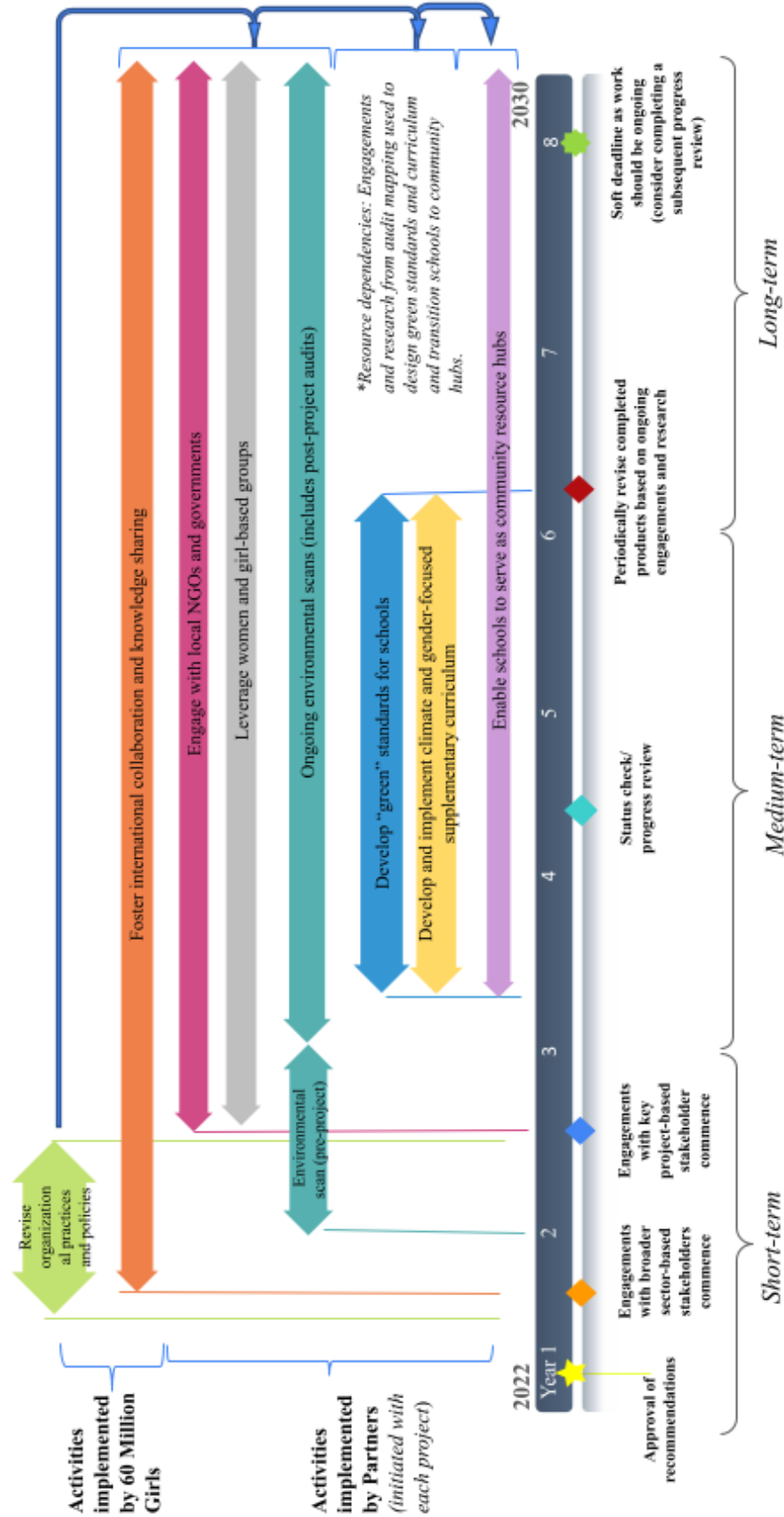
government have been in existence in India for a long time, in different permutations and combinations. However, it was only in 1992 that it was officially established by the Indian Constitution as the third level of India's federal democracy through the 73rd Amendment Act.¹⁵³

26. **Paris Agreement:** Adopted by 196 countries in 2015, the Paris Agreement is a legally binding international treaty on climate change.¹⁵⁴ It provides a durable framework for countries to reduce global greenhouse gas emissions to well below 2°C and ultimately limit the rise in global temperatures in the century.¹⁵⁵
27. **Period poverty:** refers to the increased economic vulnerability women and girls face due to the financial burden posed by menstrual supplies. These include not only menstrual pads and tampons but also related costs such as pain medication and underwear. Difficulty affording menstrual products can cause girls to stay home from school and work, with lasting consequences on their education and economic opportunities. It can also exacerbate existing vulnerabilities, pushing women and girls closer toward dangerous coping mechanisms.¹⁵⁶
28. **Remote Area Community Hotspot for Education and Learning (RACHEL):** Designed for use in under-resourced schools, remote communities, and isolated rural areas for the purposes of education, the Remote Area Community Hotspot for Education is a battery-powered device for students and schools that would otherwise lack access to the internet or educational materials.¹⁵⁷ Educators can upload school curriculums, digital libraries, and content from educational websites onto this portable, wireless, and offline device.
29. **Second-chance education:** Education to enable women to re-enter formal education, learn vocational and entrepreneurial skills and connect them to employment and business opportunities.¹⁵⁸
30. **Sexual and Reproductive Health Rights (SRHR):** encompasses the different human rights related to sexuality and reproduction, such as sexual health, sexual rights, reproductive health, and reproductive rights. Everyone, including children and adolescents, is entitled to SRHR. It's an essential part of universal health coverage, which doesn't just include the absence of disease or dysfunction, but also ensures physical, emotional, mental, and social well-being.¹⁵⁹
31. **Soft skills:** Soft skills are personal attributes that support situational awareness and enhance an individual's ability to get a job done.¹⁶⁰
32. **Substantive equality:** a legal principle that refers to the achievement of true equality in outcomes. Substantive equality is achieved when the implementation of measures is tailored to respond to the unique causes of their historical disadvantage as well as their historical, geographical and cultural needs and circumstances. This means that provides

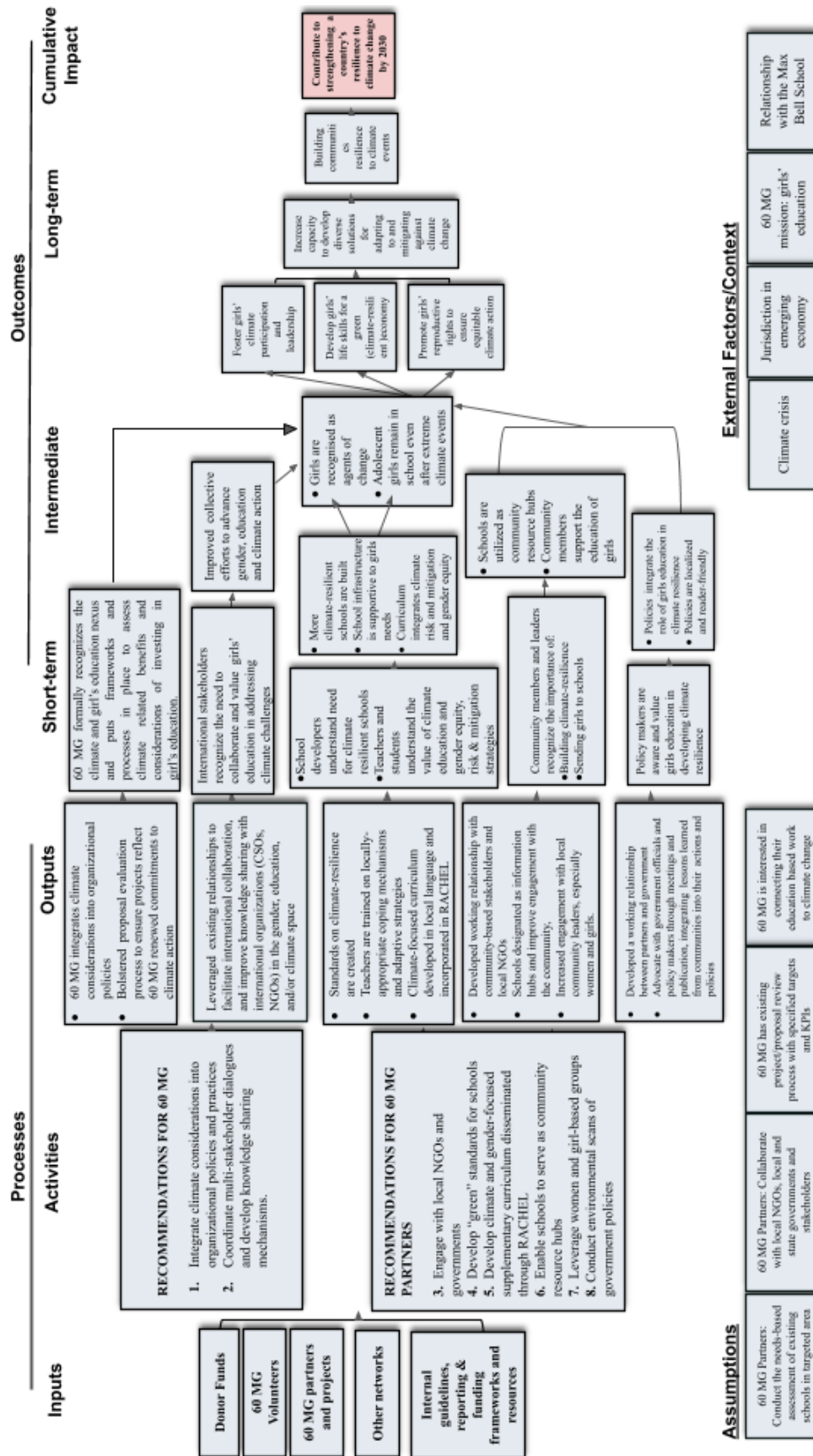
services may be provided with distinct content or using a different method of delivery to ensure that the vulnerable and marginalized groups receive services of the same quality as the majority.¹⁶¹

33. **Supplementary curriculum:** Supplementary education consists of all out-of-school learning. Classes focused on the provision of additional support for curriculum subjects include all languages and history and cultural enrichment activities such as faith, arts and sports.¹⁶²
34. **Sustainable Development Goals (SDGs):** Set up in 2015 by the United Nations General Assembly, the Sustainable Development Goals (SDGs) are an extension of the previous poverty-alleviation framework called the Millennium Development Goals (MDGs). The SDGs refer to seventeen global goals that are a call to action and a blueprint for countries to promote prosperity while protecting the planet. The broader Agenda for Sustainable Development is intended to be achieved by 2030.¹⁶³
35. **United Nations Framework Convention on Climate Change (UNFCCC):** The UNFCCC is an international treaty on the environment that seeks to stabilize greenhouse gas emissions in the atmosphere in order to prevent harmful human interference with the climate system.¹⁶⁴
36. **Vocational skills (Vocational training):** Vocational training, is the training in skills and teaching of knowledge related to a specific trade, occupation or vocation in which the student or employee wishes to participate. Vocational education may be undertaken at an educational institution, as part of secondary or tertiary education, or maybe part of initial training during employment, for example as an apprentice, or as a combination of formal education and workplace learning.
37. **Water, Sanitation and Hygiene (WASH):** Encompasses the broad range of systems and practices involved in water, sanitation, and hygiene. This includes, but is not limited to, safe-drinking water, basic toilets, and good hygiene practices. Access to WASH is an international development and public health issue.¹⁶⁵
38. **Water wives:** To survive the heat wave in the drought-stricken areas in the Indian state of Maharashtra, men are marrying multiple women, “water wives”, known locally as “*paani bais*”, so that they fetch drinking water for their home.¹⁶⁶

ANNEX C: GANTT CHART (IMPLEMENTATION ROADMAP)



ANNEX D: LOGIC MODEL



ANNEX E: LIST OF STAKEHOLDERS INTERVIEWED

S. No.	Organization	Region
1	The Brookings Institution	International
2	Bill and Melinda Gates Foundation	International
3	CARE Foundation	International
4	The Education Outcome Fund	International
5	Change for Children	International
6	Room to Read	International
7	Save Soil	International
8	Campaign for Female Education (CAMFED) International	International
9 & 10	Local Knowledge Global Goals, Project: University of the Autonomous Regions of the Nicaraguan Caribbean Coast, URACCAN, Indigenous Territorial Government, Change for Children	International/ Nicaragua
11	UN Women	India
12	National Institute of Urban Affairs (NIUA)	India
13	School and Mass Education Department, Odisha	India
14	Urban and Development Resource Center (UDRC)	India
15	Department of Higher Education, Ministry of Education	India
16	Ayang Trust	India
17	Council on Energy, Environment and Water (CEEW)	India
18	Dignity in Disasters	India
19	STEM METS	Nigeria
20	Ministry of Education, Kaduna State of Nigeria	Nigeria

21	UN Women	Nigeria
22	Ford Foundation	Nigeria
23	McGill University	Canada
24	Green Pro Bono/Independent Consultant	India

BIBLIOGRAPHY

Endnotes

- ¹ UNICEF. (n.d.). “Girls’ Education.” Retrieved from <https://www.unicef.org/education/girls-education>.
- ² Malala Fund. (2021). “A Greener, Fairer Future: Why Leaders Need to Invest in Climate and Girls’ Education.” Retrieved from https://assets.ctfassets.net/0oan5gk9rgbh/OFgutQPKIFoi5lfY2iwFC/6b2fffd2c893ebdebee60f93be814299/MalalaFund_GirlsEducation_ClimateReport.pdf.
- ³ UNESCO Institute for Statistics. (2016). “263 Million Children and Youth Are Out of School.” Retrieved from <http://uis.unesco.org/en/news/263-million-children-and-youth-are-out-school>.
- ⁴ World Health Organization. (n.d.). “Adolescent Health.” Retrieved from <https://www.who.int/health-topics/adolescent-health#:~:text=Adolescence%20is%20the%20phase%20of,from%20ages%2010%20to%2019>.
- ⁵ UNICEF Data. (2022). “Child Marriage.” *UNICEF*. Retrieved from <https://data.unicef.org/topic/child-protection/child-marriage/>.
- ⁶ Toya, Hideki & Skidmore, Mark, 2007. "Economic Development and the Impacts of Natural Disasters." *Elsevier*, 94(1), pp. 20-25.
- ⁷ Stern, Nicholas. (2006). “The Economics of Climate Change: The Stern Review.” *Grantham Research Institute on Climate Change and the Environment*. Retrieved from http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf.
- ⁸ Congressional Research Service. (2021). “Climate Change: Defining Adaptation and Resilience, With Implications for Policy.” Retrieved from <https://sgp.fas.org/crs/misc/IF11827.pdf>.
- ⁹ Sustainable Development Goals. (n.d.). “The 17 Goals.” *United Nations Department of Economic and Social Affairs*. Retrieved from <https://sdgs.un.org/goals>.
- ¹⁰ IPCC. (2018). “Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C Approved by Governments.” Retrieved from <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>.
- ¹¹ Acharya, Gyan C. (2015). “UN Expert: Those Who Contributed Least to Climate Change Now Fighting for Survival.” *United Nations*. Retrieved from <https://www.un.org/sustainabledevelopment/blog/2015/12/un-expert-those-who-contributed-least-to-climate-change-now-fighting-for-survival/>.

- ¹² Kwauk, Christina. (2021). “Why Is Girls’ Education Important for Climate Action?” *Brookings Institution*. Retrieved from <https://www.brookings.edu/blog/education-plus-development/2021/02/10/why-is-girls-education-important-for-climate-action/>.
- ¹³ Kwauk, Christina, Jessica Cooke, Elisa Hara & Joni Pegram. (2019). “Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2019/12/Girls-ed-in-climate-strategies-working-paper-FINAL.pdf>.
- ¹⁴ Kwauk, Christina & Rebecca Winthrop. (2021). “Unleashing the Creativity of Teachers and Students to Combat Climate Change: An Opportunity for Global Leadership.” *Brookings Institution*. <https://www.brookings.edu/research/unleashing-the-creativity-of-teachers-and-students-to-combat-climate-change-an-opportunity-for-global-leadership/>.
- ¹⁵ UNESCO. (2021). “Getting Every School Climate-Ready: How Countries Are Integrating Climate Change Issues in Education.” Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000379591>.
- ¹⁶ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ¹⁷ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ¹⁸ Sims, Kate. (2021). “Education, Girls’ Education and Climate Change.” *Institute of Development Studies*. Retrieved from <https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/16523>.
- ¹⁹ Kwauk, Christina, Jessica Cooke, Elisa Hara & Joni Pegram. (2019). “Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2019/12/Girls-ed-in-climate-strategies-working-paper-FINAL.pdf>.
- ²⁰ Patterson, Kristen, P., Yusuf Jameel, Mamta Mehra, & Carissa Patrone. (2021). “Girls’ Education and Family Planning.” *Project Drawdown*. Retrieved from https://www.drawdown.org/sites/default/files/Drawdown_Lift_Policy_Brief_Girls_Education_12_2121.pdf.
- ²¹ Kwauk, Christina, Jessica Cooke, Elisa Hara & Joni Pegram. (2019). “Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2019/12/Girls-ed-in-climate-strategies-working-paper-FINAL.pdf>.
- ²² Plan International. (n.d.). “Effects of Climate Change on Girls’ Rights.” Retrieved from <https://plan-international.org/emergencies/effects-of-climate-change-on-girls-rights/>.

- ²³ Patel, Kasha. (2021). “How Climate Change is Disproportionately Affecting Girls in Low-Income Countries.” *The Washington Post*. Retrieved from <https://www.washingtonpost.com/weather/2021/11/08/cop26-girls-education-climate-weather/>.
- ²⁴ UNICEF. (n.d.). “Girls’ Education.” Retrieved from <https://www.unicef.org/education/girls-education>.
- ²⁵ Malala Fund. (2021). “Malala Fund Publishes Report on Climate Change and Girls’ Education.” Retrieved from <https://malala.org/newsroom/malala-fund-publishes-report-on-climate-change-and-girls-education>.
- ²⁶ Huggett, Chelsea, Danielle Zielinski & Martina Nee. (2019). “A Shared Agenda.” *International Planned Parenthood Foundation*. Retrieved from <https://www.ippf.org/sites/default/files/2019-09/A%20Shared%20Agenda.pdf>.
- ²⁷ Global Education Monitoring Report Team. (2020). “#HerEducationOurFuture: Fact Sheet on Girls' Education.” *UNESCO*. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000372963>.
- ²⁸ Chen, Joyce, J. & Valerie Mueller. (2018). “Climate Change: Rise in Sea-Level is Making Soil Saltier, Affecting Crops.” *The Conversation*. Retrieved from https://www.business-standard.com/article/current-affairs/climate-change-rise-in-sea-level-is-making-soil-saltier-affecting-crops-118113000737_1.html.
- ²⁹ UN Women. (2022). “Explainer: How Gender Inequality and Climate Change Are Interconnected.” Retrieved from <https://www.unwomen.org/en/news-stories/explainer/2022/02/explainer-how-gender-inequality-and-climate-change-are-interconnected>.
- ³⁰ Porter, Catherine. (2021). “Education is Under Threat from Climate Change – Especially for Women and Girls.” *University of Oxford*. Retrieved from <https://www.ox.ac.uk/news/features/education-under-threat-climate-change-especially-women-and-girls>.
- ³¹ UNESCO. (n.d.). “Keeping Girls in the Picture.” Retrieved from <https://en.unesco.org/covid19/educationresponse/girlseducation>.
- ³² Global Education Monitoring Report Team. (2020). “#HerEducationOurFuture: Fact Sheet on Girls' Education.” *UNESCO*. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000372963>.
- ³³ The Economist. (2022). “Climate Change is Harder on Less Educated People.” Retrieved from <https://www.economist.com/international/2022/06/01/climate-change-is-harder-on-less-educated-people>.

- ³⁴ Malala Fund. (2022). “Cost of Not Educating Girls.” Retrieved from <https://malala.org/newsroom/cost-of-not-educating-girls>.
- ³⁵ World Health Organization. (n.d.). “Adolescent Health.” Retrieved from <https://www.who.int/health-topics/adolescent-health#:~:text=Adolescence%20is%20the%20phase%20of,from%20ages%2010%20to%2019>.
- ³⁶ Farid, Malihe, Zahra A. Barandouzi & Nasimeh S. Valipour. (2019). “Knowledge, Attitudes, and Coping Strategies Regarding Pubertal Changes Among Adolescent Girls: Risks and Compliances for Health Promotion in Puberty.” *National Library of Medicine*, 8(176). Retrieved from DOI:10.4103/jehp.jehp_381_18.
- ³⁷ UNESCO Institute for Statistics. (2016). “263 Million Children and Youth Are Out of School.” Retrieved from <http://uis.unesco.org/en/news/263-million-children-and-youth-are-out-school>.
- ³⁸ UNICEF Data. (2022). “Child Marriage.” *UNICEF*. Retrieved from <https://data.unicef.org/topic/child-protection/child-marriage/>.
- ³⁹ Belotti, Francesca, Stellamarina Donato, Arianna Bussoletti & Francesca Comunello. (2022). “Youth Activism for Climate on and Beyond Social Media: Insights from FridaysForFuture-Rome.” *The International Journal of Press/Politics*, 27(3). pp. 718-737. Retrieved from <https://journals.sagepub.com/doi/10.1177/19401612211072776>.
- ⁴⁰ Belotti, Francesca, Stellamarina Donato, Arianna Bussoletti & Francesca Comunello. (2022). “Youth Activism for Climate on and Beyond Social Media: Insights from FridaysForFuture-Rome.” *The International Journal of Press/Politics*, 27(3). pp. 718-737. Retrieved from <https://journals.sagepub.com/doi/10.1177/19401612211072776>.
- ⁴¹ Belotti, Francesca, Stellamarina Donato, Arianna Bussoletti & Francesca Comunello. (2022). “Youth Activism for Climate on and Beyond Social Media: Insights from FridaysForFuture-Rome.” *The International Journal of Press/Politics*, 27(3). pp. 718-737. Retrieved from <https://journals.sagepub.com/doi/10.1177/19401612211072776>.
- ⁴² Stern, Nicholas. (2006). “The Economics of Climate Change: The Stern Review.” *Grantham Research Institute on Climate Change and the Environment*. Retrieved from http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf.
- ⁴³ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ⁴⁴ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.

⁴⁵ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.

⁴⁶ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.

⁴⁷ Congressional Research Service. (2021). “Climate Change: Defining Adaptation and Resilience, With Implications for Policy.” Retrieved from <https://sgp.fas.org/crs/misc/IF11827.pdf>.

⁴⁸ Congressional Research Service. (2021). “Climate Change: Defining Adaptation and Resilience, With Implications for Policy.” Retrieved from <https://sgp.fas.org/crs/misc/IF11827.pdf>.

⁴⁹ Achala C. Et al., (2014) “Climate-Resilient Pathways: Adaptation, Mitigation, and Sustainable Development” Cambridge University Press Retrieved from https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap20_FINAL.pdf.

⁵⁰ Sustainable Development Goals. (n.d.). “The 17 Goals.” *United Nations Department of Economic and Social Affairs*. Retrieved from <https://sdgs.un.org/goals>.

⁵¹ Goal 4.1: by 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes. See Sustainable Development Goals. (n.d.). “The 17 Goals.” United Nations Department of Economic and Social Affairs. Retrieved from <https://sdgs.un.org/goals>.

Goal 4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations. See Sustainable Development Goals. (n.d.). “The 17 Goals.” United Nations Department of Economic and Social Affairs. Retrieved from <https://sdgs.un.org/goals>.

⁵² Goal 5 is to achieve gender equality and empower all women and girls. See Sustainable Development Goals. (n.d.). “The 17 Goals.” United Nations Department of Economic and Social Affairs. Retrieved from <https://sdgs.un.org/goals>.

⁵³ Goal 13 is to take urgent action to combat climate change and its impacts. Climate change is one of the greatest challenges of our time.

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. See Sustainable Development Goals. (n.d.). “The 17 Goals.” United Nations Department of Economic and Social Affairs. Retrieved from <https://sdgs.un.org/goals>.

⁵⁴ Goal 11 also emphasizes on the need to accomplish this feat through the values of inclusivity, safety, resilience and sustainability whilst acknowledging the unprecedented impact of climate change and the urgency for action. See Sustainable Development Goals. (n.d.). “The 17 Goals.”

United Nations Department of Economic and Social Affairs. Retrieved from <https://sdgs.un.org/goals>.

⁵⁵ Acharya, Gyan C. (2015). “UN Expert: Those Who Contributed Least to Climate Change Now Fighting for Survival.” *United Nations*. Retrieved from <https://www.un.org/sustainabledevelopment/blog/2015/12/un-expert-those-who-contributed-least-to-climate-change-now-fighting-for-survival/>.

⁵⁶ Acharya, Gyan C. (2015). “UN Expert: Those Who Contributed Least to Climate Change Now Fighting for Survival.” *United Nations*. Retrieved from <https://www.un.org/sustainabledevelopment/blog/2015/12/un-expert-those-who-contributed-least-to-climate-change-now-fighting-for-survival/>.

⁵⁷ Osman-Elasha, Balgis. (n.d.). “Women...In the Shadow of Climate Change.” *United Nations*. Retrieved from <https://www.un.org/en/chronicle/article/women-in-shadow-climate-change#:~:text=Women%20are%20increasingly%20being%20seen,dependent%20on%20threatened%20natural%20resources>.

⁵⁸ OECD. (2020). “Developing Countries and Development Co-operation: What Is At Stake?” Retrieved from <https://www.oecd.org/coronavirus/policy-responses/developing-countries-and-development-co-operation-what-is-at-stake-50e97915/>.

⁵⁹ ND-Gain. (2022). “Rankings.” *University of Notre Dame*. Retrieved from <https://gain.nd.edu/our-work/country-index/rankings/>.

⁶⁰ ND-Gain. (2022). “Rankings.” *University of Notre Dame*. Retrieved from <https://gain.nd.edu/our-work/country-index/rankings/>.

⁶¹ ND-Gain. (2022). “Rankings.” *University of Notre Dame*. Retrieved from <https://gain.nd.edu/our-work/country-index/rankings/>.

⁶² United Nations Development Programme. (2020). “Specific Country Data: India.” Retrieved from <https://hdr.undp.org/data-center/specific-country-data#/countries/IND>.

⁶³ World Economic Forum. (2021). “Global Gender Gap Report 2021: Insight Report.” Retrieved from https://www3.weforum.org/docs/WEF_GGGR_2021.pdf.

⁶⁴ World Economic Forum. (2021). “Global Gender Gap Report 2021: Insight Report.” Retrieved from https://www3.weforum.org/docs/WEF_GGGR_2021.pdf.

⁶⁵ OECD. (n.d.). “Realising Opportunities in Rural Regions in the Transition to Net-Zero.” Retrieved from <https://www.oecd.org/regional/rural-development/climate-change-net-zero.htm>.

⁶⁶ Rankin, Jennifer & Toby Vogel. (2008). “Emerging Economies Face Up to Their Climate Responsibilities.” *Politico*. Retrieved from <https://www.politico.eu/article/emerging-economies-face-up-to-their-climate-responsibilities/>.

- ⁶⁷ Williams, Jeremy & Keogh, Rebecca. (2018). "School as Sustainable Enterprise: Building Climate Resilient Communities Through Investment in the Girl Child." *Green School for Girls*. Retrieved from https://www.researchgate.net/publication/323166866_School_as_Sustainable_Enterprise_Building_Climate_Resilient_Communities_through_Investment_in_the_Girl_Child.
- ⁶⁸ Williams, Jeremy & Keogh, Rebecca. (2018). "School as Sustainable Enterprise: Building Climate Resilient Communities Through Investment in the Girl Child." *Green School for Girls*. Retrieved from https://www.researchgate.net/publication/323166866_School_as_Sustainable_Enterprise_Building_Climate_Resilient_Communities_through_Investment_in_the_Girl_Child.
- ⁶⁹ Kwauk, Christina., Jessica Cooke, Elisa Hara & Joni Pegram. (2019). "Girls' Education in Climate Strategies." *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2019/12/Girls-ed-in-climate-strategies-working-paper-FINAL.pdf>.
- ⁷⁰ Kwauk, Christina., Jessica Cooke, Elisa Hara & Joni Pegram. (2019). "Girls' Education in Climate Strategies." *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2019/12/Girls-ed-in-climate-strategies-working-paper-FINAL.pdf>.
- ⁷¹ Kwauk, Christina & Amanda Braga. (2017). "Three Platforms for Girls' Education in Climate Strategies." *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ⁷² Kwauk, Christina & Amanda Braga. (2017). "Three Platforms for Girls' Education in Climate Strategies." *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ⁷³ B athge, Sandra. (2010). "Climate Change and Gender: Economic Empowerment of Women Through Climate Mitigation and Adaptation?" *Deutsche Gesellschaft F ur*. Retrieved from <https://www.oecd.org/social/gender-development/46975138.pdf>.
- ⁷⁴ Malala Fund. (2021). "A Greener, Fairer Future: Why Leaders Need to Invest in Climate and Girls' Education." Retrieved from https://assets.ctfassets.net/0oan5gk9rgbh/OFgutQPKIFoi5lfY2iwFC/6b2fffd2c893ebdebee60f93be814299/MalalaFund_GirlsEducation_ClimateReport.pdf.
- ⁷⁵ Kwauk, Christina & Amanda Braga. (2017). "Three Platforms for Girls' Education in Climate Strategies." *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ⁷⁶ Kwauk, Christina, Jessica Cooke, Elisa Hara & Joni Pegram. (2019). "Girls' Education in Climate Strategies." *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2019/12/Girls-ed-in-climate-strategies-working-paper-FINAL.pdf>.

- ⁷⁷ UN Women. (2022). “Press release: UN Commission on the Status of Women Reaffirms Women's and Girls’ Leadership As Key to Address Climate Change, Environmental and Disaster Risk Reduction For All.” Retrieved from <https://www.unwomen.org/en/news-stories/press-release/2022/03/press-release-un-commission-on-the-status-of-women-reaffirms-womens-and-girls-leadership-as-key-to-address-climate-change-environmental-and-disaster-risk-reduction-for-all>.
- ⁷⁸ Sims, Kate. (2021). “Education, Girls’ Education and Climate Change.” *Education Development Trust*. Retrieved from https://resourcecentre.savethechildren.net/pdf/eir_29_education_girls_education_and_climate_change.pdf/.
- ⁷⁹ Blum, Nicole. (2015). “Topic Guide: Education, Climate and Environment.” *Evidence on Demand*. Retrieved from https://discovery.ucl.ac.uk/id/eprint/1475345/1/EoD_Topic_Guide_Education_Climate_Environment.pdf.
- ⁸⁰ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ⁸¹ UNICEF. (n.d.). “Girls’ Education.” Retrieved from <https://www.unicef.org/education/girls-education>.
- ⁸² Patterson, Kristen, P., Yusuf Jameel, Mamta Mehra, & Carissa Patrone. (2021). “Girls’ Education and Family Planning.” *Project Drawdown*. Retrieved from https://www.drawdown.org/sites/default/files/Drawdown_Lift_Policy_Brief_Girls_Education_122121.pdf.
- ⁸³ Hawken, Paul. (2017). “Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming.” *Project Drawdown*. Retrieved from <https://drawdown.org/the-book>.
- ⁸⁴ Sims, Kate. (2021). “Education, Girls’ Education and Climate Change.” *Education Development Trust*. Retrieved from https://resourcecentre.savethechildren.net/pdf/eir_29_education_girls_education_and_climate_change.pdf/.
- ⁸⁵ O’Neill, Brian C., et al. (2010). “Global Demographic Trends and Future Carbon Emissions.” *Proceedings of the National Academy of Sciences* 107(41). pp. 17521–26. Retrieved from <https://doi.org/10.1073/pnas.1004581107>.
- ⁸⁶ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.

- ⁸⁷ Malala Fund. (2022). “A Greener, Fairer Future: Why Leaders Need to Invest in Climate and Girls’ Education.” Retrieved from https://assets.ctfassets.net/0oan5gk9rgbh/OFgutQPKIFoi5lfY2iwFC/6b2fffd2c893ebdebee60f93be814299/MalalaFund_GirlsEducation_ClimateReport.pdf.
- ⁸⁸ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ⁸⁹ Interview with a social entrepreneur, February 8, 2022.
- ⁹⁰ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” Brookings Institution. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ⁹¹ The Economist. (2022). “Climate Change is Harder on Less Educated People.” Retrieved from <https://www.economist.com/international/2022/06/01/climate-change-is-harder-on-less-educated-people>.
- ⁹² The Economist. (2022). “Climate Change is Harder on Less Educated People.” Retrieved from <https://www.economist.com/international/2022/06/01/climate-change-is-harder-on-less-educated-people>.
- ⁹³ The Economist. (2022). “Climate Change is Harder on Less Educated People.” Retrieved from <https://www.economist.com/international/2022/06/01/climate-change-is-harder-on-less-educated-people>.
- ⁹⁴ Filks, Ilze & Philip O’Connor. (2022). “‘Girls’ Education Is a Climate Solution’: Malala Yousafzai Joins Climate Protest.” *Reuters*. Retrieved from <https://www.reuters.com/business/environment/girls-education-is-climate-solution-malala-yousafzai-joins-climate-protest-2022-06-10/>.
- ⁹⁵ Plan International. (n.d.). “Effects of Climate Change on Girls’ Rights.” Retrieved from <https://plan-international.org/emergencies/effects-of-climate-change-on-girls-rights/>.
- ⁹⁶ Blakemore, Erin. (2015). “Water Wives: Men in India Marry Extra Women to Fetch Them Water.” *Smithsonian Magazine*. Retrieved from <https://www.smithsonianmag.com/smart-news/water-wives-men-india-marry-extra-women-fetch-them-water-180955511/>.
- ⁹⁷ Jane, Anika. (2022). “The Unheard Voice of Climate Change – Voices from the Global South on Girls’ Education.” *Global Partnership for Education*. Retrieved from <https://www.globalpartnership.org/blog/unheard-voice-climate-change-voices-global-south-girls-education>.
- ⁹⁸ Jane, Anika. (2022). “The Unheard Voice of Climate Change – Voices from the Global South on Girls’ Education.” *Global Partnership for Education*. Retrieved from

<https://www.globalpartnership.org/blog/unheard-voice-climate-change-voices-global-south-girls-education>.

⁹⁹ Ossai, Edem D. (2021). “Education in Emergency in Nigeria: Creating Gender Equitable Policies so All Girls Have an Uninterrupted Right to Learn.” *Brookings*. July 27, 2021. <https://www.brookings.edu/blog/education-plus-development/2021/07/27/education-in-emergency-in-nigeria-creating-gender-equitable-policies-so-all-girls-have-an-uninterrupted-right-to-learn/>.

¹⁰⁰ Kaalu, Samuel. (n.d.). “In Northern Nigeria, Attacks on Schools Threaten Children’s Right to Education.” *UNICEF Nigeria*. www.unicef.org . <https://www.unicef.org/nigeria/stories/northern-nigeria-attacks-schools-threaten-childrens-right-education>.

¹⁰¹ Abisoye, Omotayo. (2019). "Right to Education and Security in Nigeria: The Girl Child in Northeastern Nigeria in Focus." *Sociology of Education* 4(1). Retrieved from http://www.ijsser.org/files_2019/ijsser_04_44.pdf.

¹⁰² Ossai, Edem D. (2021). “Education in Emergency in Nigeria: Creating Gender Equitable Policies so All Girls Have an Uninterrupted Right to Learn.” *Brookings*. <https://www.brookings.edu/blog/education-plus-development/2021/07/27/education-in-emergency-in-nigeria-creating-gender-equitable-policies-so-all-girls-have-an-uninterrupted-right-to-learn/>.

¹⁰³ UN Women. (2022). “Explainer: How Gender Inequality and Climate Change Are Interconnected.” Retrieved from <https://www.unwomen.org/en/news-stories/explainer/2022/02/explainer-how-gender-inequality-and-climate-change-are-interconnected>.

¹⁰⁴ UNICEF and UNFPA. (2022). “Periods in the Pandemic: 9 Things We Need to Know.” Retrieved from <https://www.unicef.org/coronavirus/covid-19-periods-in-pandemic-9-things-to-know>.

¹⁰⁵ Nielsen, Anja & Alexander Carnwath. (2019). “Inclusive Learning: How WAHS in Schools Empowers Girls’ Education.” *UNICEF Evidence for Action*. Retrieved from <https://blogs.unicef.org/evidence-for-action/how-wash-in-schools-empowers-girls-education/>.

¹⁰⁶ Onuoha-Ogwe, Ijeoma. (2022). “WASH Facilities Influence School Attendance Among Adolescent Girls.” *UNICEF Nigeria*. Retrieved from <https://www.unicef.org/nigeria/stories/wash-facilities-influence-school-attendance-among-adolescent-girls>.

¹⁰⁷ Durieux, Cloé & María Margarita Díaz. (2019). “Menstruation is a Climate Justice Issue. Period.” *EmpoderaClima*. Retrieved from <https://www.empoderaclima.org/en/database/articles/menstruation-is-a-climate-justice-issue-period>.

- ¹⁰⁸ Interview with a University Professor, March 29, 2022.
- ¹⁰⁹ Resilient Cities Network. (2018). “School Infrastructure Resilience – CoLab Workshop Report.” Retrieved from https://resilientcitiesnetwork.org/downloadable_resources/UR/School-Infrastructure-Resilience-CoLab-Workshop-Report.pdf.
- ¹¹⁰ Interview with a Senior Secretary from a Ministry of Education, February 22, 2022.
- ¹¹¹ UNESCO. (2021). “Getting Every School Climate-Ready: How Countries Are Integrating Climate Change Issues in Education.” Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000379591>.
- ¹¹² United Nations. (2021). “COP26: It’s (Almost) Here.” *United Nations*. <https://www.un.org/en/climatechange/cop26>.
- ¹¹³ Ferguson, Sarah. (2022). “UNICEF: In The Fight For Climate Action, Girls’ Voices Must Be Heard.” *Forbes*. Retrieved from. <https://www.forbes.com/sites/unicefusa/2022/04/22/unicef-in-the-fight-for-climate-action-girls-voices-must-be-heard/?sh=34c7fd593345>.
- ¹¹⁴ Jane, Anika. (2022). “The Unheard Voice of Climate Change – Voices from the Global South on Girls’ Education.” *Global Partnership for Education*. Retrieved from <https://www.globalpartnership.org/blog/unheard-voice-climate-change-voices-global-south-girls-education>.
- ¹¹⁵ Blum, Nicole. (2015). “Topic Guide: Education, Climate and Environment.” *Evidence on Demand*. Retrieved from https://discovery.ucl.ac.uk/id/eprint/1475345/1/EoD_Topic_Guide_Education_Climate_Environment.pdf.
- ¹¹⁶ Muralidharan, Karthik & Nishith Prakash. (2017). “Cycling to School: Increasing Secondary School Enrollment for Girls in India.” *American Economic Journal*, 9(3). pp. 321-50. Retrieved from <https://www.aeaweb.org/articles?id=10.1257/app.20160004>.
- ¹¹⁷ Haynes, Suyin. (2016). “How an Indian Comic Book Is Teaching Girls About Their Periods.” *TIME*. Retrieved from <https://time.com/4590678/menstrupedia-aditi-gupta-taboo-india/>.
- ¹¹⁸ Blum, Nicole. (2015). “Topic Guide: Education, Climate and Environment.” *Evidence on Demand*. Retrieved from https://discovery.ucl.ac.uk/id/eprint/1475345/1/EoD_Topic_Guide_Education_Climate_Environment.pdf.
- ¹¹⁹ Ajitoni, Sunday Olukayode & Tolulope Victoria Gbadamosi. (2015). "Community-Based Instructional Strategies, School Location, and Primary School Pupils' Environmental Knowledge." *Journal of the International Society for Teacher Education*, 19(2). pp.22-32.

- ¹²⁰ Gibb, Natalie. (2016). “Getting Climate-Ready: A Guide for Schools on Climate Action.” *UNESCO*. Retrieved from https://unesdoc.unesco.org/in/documentViewer.xhtml?v=2.1.196&id=p::usmarcdef_0000246740&file=/in/rest/annotationSVC/DownloadWatermarkedAttachment/attach_import_26d03a6b-ed8d-49f7-99c0-.
- ¹²¹ Bato, Clotilde. (n.d.). “Women as Seed Conservation and Agro-Ecology Experts Helping Their Communities Resist Climate Change.” *Women & Gender Constituency*. Retrieved from https://womensgenderclimate.org/gjc_solutions/women-as-seed-conservation-and-agro-ecology-experts-helping-their-communities-resist-climate-change/.
- ¹²² Gibb, Natalie. (2016). “Getting Climate-Ready: A Guide for Schools on Climate Action.” *UNESCO*. Retrieved from https://unesdoc.unesco.org/in/documentViewer.xhtml?v=2.1.196&id=p::usmarcdef_0000246740&file=/in/rest/annotationSVC/DownloadWatermarkedAttachment/attach_import_26d03a6b-ed8d-49f7-99c0-.
- ¹²³ Alternative Futures. (n.d.). “Climate Change Agriculture and Food Security.” Retrieved from <https://www.alternativefutures.org.in/training-panchayat-women/>.
- ¹²⁴ Samson, Rachel. (2021). “Cost-Benefit Analysis is the Wrong Tool for Tackling Climate Change.” *Policy Options*. Retrieved from <https://policyoptions.irpp.org/magazines/november-2021/cost-benefit-analysis-is-the-wrong-tool-for-tackling-climate-change/>.
- ¹²⁵ Samson, Rachel. (2021). “Cost-Benefit Analysis is the Wrong Tool for Tackling Climate Change.” *Policy Options*. Retrieved from <https://policyoptions.irpp.org/magazines/november-2021/cost-benefit-analysis-is-the-wrong-tool-for-tackling-climate-change/>.
- ¹²⁶ Rennert, Kevin & Cora Kingdon. (2019). “Social Cost of Carbon 101.” *Resources for the Future*. Retrieved from <https://www.rff.org/publications/explainers/social-cost-carbon-101/>.
- ¹²⁷ The World Bank. (n.d.). “Social Dimensions of Climate Change.” Retrieved from <https://www.worldbank.org/en/topic/social-dimensions-of-climate-change#:~:text=As%20the%20climate%20continues%20to,identity%2C%20and%20other%20related%20risks.&text=Climate%20change%20is%20deeply%20intertwined%20with%20global%20patterns%20of%20inequality>.
- ¹²⁸ Samson, Rachel. (2021). “Cost-Benefit Analysis is the Wrong Tool for Tackling Climate Change.” *Policy Options*. Retrieved from <https://policyoptions.irpp.org/magazines/november-2021/cost-benefit-analysis-is-the-wrong-tool-for-tackling-climate-change/>.
- ¹²⁹ Samson, Rachel. (2021). “Cost-Benefit Analysis is the Wrong Tool for Tackling Climate Change.” *Policy Options*. Retrieved from <https://policyoptions.irpp.org/magazines/november-2021/cost-benefit-analysis-is-the-wrong-tool-for-tackling-climate-change/>.

- ¹³⁰ Kwauk, Christina & Amanda Braga. (2017). “Three Platforms for Girls’ Education in Climate Strategies.” *Brookings Institution*. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/09/platforms-for-girls-education-in-climate-strategies.pdf>.
- ¹³¹ World Health Organization. (2022). “Adolescent Health.” Retrieved from https://www.who.int/health-topics/adolescent-health#tab=tab_1.
- ¹³² Sustainable Development Goals. (n.d.). “Goal 13: Take Urgent Action to Combat Climate Change and its Impacts.” Retrieved from <https://www.un.org/sustainabledevelopment/climate-change/>.
- ¹³³ Bove, Tristan. (2021). “What Does It Mean to Be a Climate Leader?” *Earth.Org*. Retrieved from <https://earth.org/climate-leader/#:~:text=At%20its%20simplest%2C%20climate%20leadership,also%20vague%20and%20disturbingly%20competitive>.
- ¹³⁴ Johnston, Julie. (2019). “Climate Change Literacy to Combat Climate Change and Its Impacts.” *Royal Roads University*. pp.1-14. DOI:10.1007/978-3-319-71063-1_31-1.
- ¹³⁵ Center for Climate and Energy Solutions. (n.d.). “Climate Resilience Portal.” Retrieved from <https://www.c2es.org/content/climate-resilience-overview/>.
- ¹³⁶ UN Women. (2022). “CSW66 (2022).” Retrieved from <https://www.unwomen.org/en/csw/csw66-2022>.
- ¹³⁷ UNDRR. (n.d.). “Disaster Risk Reduction.” Retrieved from <https://www.undrr.org/terminology/disaster-risk-reduction>.
- ¹³⁸ UNICEF. (2022). “Child marriage.” Retrieved from <https://www.unicef.org/protection/child-marriage>.
- ¹³⁹ Fordham University. (n.d.). “Conducting an Environmental Scan.” Retrieved from https://www.fordham.edu/info/26625/conducting_an_environmental_scan.
- ¹⁴⁰ University of Manitoba. (2021). “Experiential Learning (EL) at the University of Manitoba.” Retrieved from https://umanitoba.ca/centre-advancement-teaching-learning/sites/centre-advancement-teaching-learning/files/2022-04/um-experiential-learning-typology-senate-endorsed-rev-mar-9-2022_0.pdf.
- ¹⁴¹ U.S. Department of Agriculture. (n.d.). “Extreme Weather.” Retrieved from <https://www.climatehubs.usda.gov/content/extreme-weather>.
- ¹⁴² Navdanya. (2016). “Seeds of Hope, Seeds of Resilience.” Retrieved from <https://www.navdanya.org/climate-change/seed-of-resilience>.

¹⁴³ Save the Children. (n.d.). “Gender Discrimination: Inequality Starts in Childhood.” Retrieved from <https://www.savethechildren.org/us/charity-stories/how-gender-discrimination-impacts-girls#:~:text=Gender%20inequality%20is%20discrimination%20on,violated%20by%20gender%20based%20discrimination.>

¹⁴⁴ IISD. (n.d.). “Gender-Responsive Climate Action.” Retrieved from [https://www.iisd.org/story/gender-responsive-climate-action/#gender-responsive-climate-39486.](https://www.iisd.org/story/gender-responsive-climate-action/#gender-responsive-climate-39486)

¹⁴⁵ Iberdrola. (n.d.). “Green Jobs: Good For You, For the Environment and For the Economy.” Retrieved from [https://www.iberdrola.com/sustainability/what-are-green-jobs.](https://www.iberdrola.com/sustainability/what-are-green-jobs)

¹⁴⁶ Whole Building Design Guide. (2022). “Green Building Standards and Certification Systems.” Retrieved from [https://www.wbdg.org/resources/green-building-standards-and-certification-systems.](https://www.wbdg.org/resources/green-building-standards-and-certification-systems)

¹⁴⁷ ACS. (n.d.). “What Is the Greenhouse Effect?” Retrieved from [https://www.acs.org/content/acs/en/climatescience/climatesciencenarratives/what-is-the-greenhouse-effect.html.](https://www.acs.org/content/acs/en/climatescience/climatesciencenarratives/what-is-the-greenhouse-effect.html)

¹⁴⁸ ACS. (n.d.). “What Is the Greenhouse Effect?” Retrieved from [https://www.acs.org/content/acs/en/climatescience/climatesciencenarratives/what-is-the-greenhouse-effect.html.](https://www.acs.org/content/acs/en/climatescience/climatesciencenarratives/what-is-the-greenhouse-effect.html)

¹⁴⁹ United Nations Sustainable Development Group. (n.d.). “Human Rights-Based Approach.” Retrieved from [https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach.](https://unsdg.un.org/2030-agenda/universal-values/human-rights-based-approach)

¹⁵⁰ Merriam-Webster. (2022). “Intersectionality.” Retrieved from [https://www.merriam-webster.com/dictionary/intersectionality.](https://www.merriam-webster.com/dictionary/intersectionality)

¹⁵¹ 60 Million Girls. (2022). “Mobile Learning Lab.” Retrieved from [https://60millionsdefilles.org/en/mobile-learning-lab/.](https://60millionsdefilles.org/en/mobile-learning-lab/)

¹⁵² University of Notre Dame. (2021). “Notre Dame Global Adaptation Initiative: Country Index.” Retrieved from [https://gain.nd.edu/our-work/country-index/.](https://gain.nd.edu/our-work/country-index/)

¹⁵³ Panchayat. (n.d.). “What is a Panchayat.” Retrieved from [https://www.pria.org/panchayathub/panchayat_text_view.php.](https://www.pria.org/panchayathub/panchayat_text_view.php)

¹⁵⁴ United Nations Climate Change. (2022). “The Paris Agreement.” Retrieved from [https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.](https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement)

- ¹⁵⁵ United Nations Climate Change. (2022). “The Paris Agreement.” Retrieved from <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.
- ¹⁵⁶ United Nations Population Fund. (2022). “Menstruation and Human Rights - Frequently Asked Questions.” Retrieved from <https://www.unfpa.org/menstruationfaq>.
- ¹⁵⁷ World Possible. (n.d.). “RACHEL.” Retrieved from <https://worldpossible.org/>.
- ¹⁵⁸ Eurostat Statistics Explained. (n.d.). “Education and Training Glossary.” Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Category:Education_and_training_glossary.
- ¹⁵⁹ World Health Organization. (2022). “Sexual and Reproductive Health Research.” Retrieved from <https://www.who.int/teams/sexual-and-reproductive-health-and-research/key-areas-of-work/sexual-health/defining-sexual-health>.
- ¹⁶⁰ OECD (2015), Survey of Adult Skills, Retrieved from <https://www.oecd.org/skills/piaac/>
- ¹⁶¹ Government of Canada. (2020). “Jordan’s Principle: Substantive Equality Principles.” Retrieved from <https://www.sac-isc.gc.ca/eng/1583698429175/1583698455266>.
- ¹⁶² YPF Trust. (2022). “Supplementary Education.” Retrieved from <https://www.supplementaryeducation.org.uk/supplementary-education-the-nrc/>.
- ¹⁶³ United Nations Department of Economic and Social Affairs. (n.d.). “Do You Know All 17 SDGs?” Retrieved from <https://sdgs.un.org/goals>.
- ¹⁶⁴ United Nations Climate Change. (2022). “About the Secretariat.” Retrieved from <https://unfccc.int/about-us/about-the-secretariat>.
- ¹⁶⁵ World Health Organization. (2022). “Water, Sanitation and Hygiene (WASH).” Retrieved from <https://www.who.int/health-topics/water-sanitation-and-hygiene-wash#:~:text=Safe%20drinking%2Dwater%2C%20sanitation%20and,communities%20living%20in%20healthy%20environments>.
- ¹⁶⁶ Bhattacharya, Mrityika. (2020). “The ‘Water Wives’ of Maharashtra: Engendering Water Resource Management in Rural India.” *Center for Regional Research and Sustainable Studies*. Retrieved from <https://www.thinkcrrss.com/post/the-water-wives-of-maharashtra-engendering-water-resource-management-in-rural-india>.

Additional Sources Consulted

Alikeju, Eyimoga Helen. (2012). "The Impact of Climate Change in Nigeria: Implications for Schooling." *Mediterranean Journal of Social Sciences* 3(16). pp.137.

Federal Ministry of Environment. (2020). "National Action Plan on Gender and Climate Change for Nigeria." Retrieved from <http://dhq.climatechange.gov.ng/Documents/climate-change-and-gender-action-plan.pdf>.

Federal Ministry of Finance, Budget and National Planning. "National Development Plan (NDP) 2021-2025." *Federal Republic of Nigeria*. Vol. 1. (2020). Retrieved from https://nationalplanning.gov.ng/wp-content/uploads/2021/12/NDP-2021-2025_AA_FINAL_PRINTING.pdf.

Federal Ministry of Finance, Budget and National Planning. (2020). "National Development Plan (NDP) 2021-2025." Vol. 1. Retrieved from https://nationalplanning.gov.ng/wp-content/uploads/2021/12/NDP-2021-2025_AA_FINAL_PRINTING.pdf.

Forest & Environment Department. (2018). "Odisha State Action Plan on Climate Change (Phase-II)." *Government of Odisha*.
<http://climatechangecellodisha.org/pdf/State%20Action%20Plan%20on%20Climate%20Change%202018-23.pdf>.

Haider, Huma. (2019). "Climate Change in Nigeria: Impacts and Responses."

IPCC Sixth Assessment Report. (n.d.). "Climate Change 2022: Impacts, Adaptation and Vulnerability." *IPCC*. <https://www.ipcc.ch/report/ar6/wg2/>.

IWDA. (2020). "Taking a Gender Sensitive Approach to Climate Change Prevention, Mitigation and Adaptation." *International Women's Development Agency*. Retrieved from <https://iwda.org.au/assets/files/IWDA-Climate-Change-Policy-Position-Paper-UPDATED-May-2020.pdf>.

Jyothi, Anantha D. (2021). "Shikshak Parv." Retrieved from https://www.education.gov.in/shikshakparv/docs/Anantha_Jyoti.pdf.

Ludin, Salizar M., Munirah Rohaizat & Paul Arbon. (2018). "The Association between Social Cohesion and Community Disaster Resilience: A Cross-Sectional Study." *Health & Social Care in the Community*, 27(3): pp.621–31. Retrieved from <https://doi.org/10.1111/hsc.12674>.

Mahatma Gandhi International School. (n.d.). "Our Pedagogy." n.d. Mahatma Gandhi International School. Retrieved from <https://www.mgis.in/our-pedagogy/>.

Malala Fund. (n.d.). "Nigeria." Retrieved from <https://malala.org/countries/nigeria>.

- Mohanty, Abinash & Shreya Wadhawan. (2021). "Mapping India's Climate Vulnerability." *CEEW*. Retrieved from <https://www.ceew.in/publications/mapping-climate-change-vulnerability-index-of-india-a-district-level-assessment>.
- Navdanya International. (n.d.). "Navdanya Community Seed Bank." Retrieved from <https://navdanyainternational.org/what-we-do/navdanya-community-seed-banks/>.
- Notre Dame Global Adaptation Initiative. (n.d.). "Country Index." *University of Notre Dame*. Retrieved from <https://gain.nd.edu/our-work/country-index/>.
- Notre Dame Global Adaptation Initiative. (n.d.). "Indicators." *University of Notre Dame*. Retrieved from <https://gain.nd.edu/our-work/country-index/methodology/indicators/>.
- Onwutuebe, Chidiebere J. (2019). "Patriarchy and Women Vulnerability to Adverse Climate Change in Nigeria." *Sage Open* 9(1). 2158244019825914.
- Panda, Architesh. (2020). "Climate Change, Displacement, and Managed Retreat in Coastal India." *Migration Policy Institute*. <https://reliefweb.int/report/india/climate-change-displacement-and-managed-retreat-coastal-india>.
- Patterson, Kristen, P., Yusuf Jameel, Mamta Mehra & Carissa Patrone. (2021). "Girls' Education and Family Planning: Essential Components of Climate Adaptation and Resilience." *Project Drawdown*. 10.13140/RG.2.2.22680.32003.
- Picciareello, Angela, Sarah Colenbrander, Amir Bazaz & Rathin Roy. (2021). "The Costs of Climate Change in India: A review of the Climate-Related Risks Facing India, and Their Economic and Social Costs." *ODI Literature Review*. Retrieved from <https://cdn.odi.org/media/documents/ODI-JR-CostClimateChangeIndia-final.pdf>.
- Porter, Catherine. (2021). "Education Is Under Threat from Climate Change - Especially for Women and Girls." *University of Oxford*. Retrieved from <https://www.ox.ac.uk/news/features/education-under-threat-climate-change-especially-women-and-girls#:~:text=Education%20is%20under%20threat%20from%20climate%20change%20%2D%20especially%20for%20women%20and%20girls>.
- The Federal Ministry of Women Affairs and Social Development. (2006). "National Gender Policy: Situation Analysis/Framework." Retrieved from <https://nigerianwomentrustfund.org/wp-content/uploads/National-Gender-Policy-Situation-Analysis.pdf>.
- UNDP India. (n.d.). "Climate Change and Wellbeing: A PARI and UNDP Series | United Nations Development Programme." Retrieved from <https://www.undp.org/india/climate-change-and-wellbeing-pari-and-undp-series>.
- UNDP India. (n.d.). "Women Adapting to Climate Change." *Exposure*. Retrieved from <https://undp-india.exposure.co/women-adapting-to-climate-change>.

- UNDP. (2019). “Gender Assessment.” Retrieved from <https://www.greenclimate.fund/sites/default/files/document/gender-assessment-fp084-undp-india.pdf>.
- UNDP India. (2021). “Climate Change and Wellbeing: A PARI and UNDP Series.” Retrieved from <https://www.in.undp.org/content/india/en/home/climate-and-disaster-resilience/successstories/pari-undp-series.html>.
- UNDP India. (n.d.). “Women Adapting to Climate Change.” *Exposure*. Retrieved from <https://undp-india.exposure.co/women-adapting-to-climate-change>.
- UNICEF East Asia and Pacific Regional Office. (n.d.). “It Is Getting Hot: Perspectives From East Asia and the Pacific.” *UNICEF*. Retrieved from <https://www.unicef.org/eap/media/4596/file/It%20is%20getting%20hot:%20Call%20for%20education%20systems%20to%20respond%20to%20the%20climate%20crisis.pdf>.
- UN Women. (2022). “CSW66 Global Youth Recommendations: Youth, Gender, and Climate.” Retrieved from <https://gefyouthmanifesto.wixsite.com/website/csw66youthrecommendations>.
- UN Women. (n.d.). “Press Release: UN Commission on the Status of Women Reaffirms Women’s and Girls’ Leadership as Key to Address Climate Change, Environmental and Disaster Risk Reduction for All.” Retrieved from <https://www.unwomen.org/en/news-stories/press-release/2022/03/press-release-un-commission-on-the-status-of-women-reaffirms-womens-and-girls-leadership-as-key-to-address-climate-change-environmental-and-disaster-risk-reduction-for-all>.
- World Economic Forum. (2021). “Global Gender Report 2021.” Retrieved from https://www3.weforum.org/docs/WEF_GGGR_2021.pdf.
- 60 Million Girls. (2021). “60 Million Girls in San Francisco de Opalaca, Honduras.” Retrieved from <https://60millionsdefilles.org/en/60-million-girls-in-san-francisco-de-opalaca-honduras/>.