A greener, fairer future:

Why leaders need to invest in climate and girls' education

MALALA FUND

Contents

Glossary

Climate adaptation

Changes to behaviours, practices, systems, technologies and relationships that reduce the negative impacts of climate change, creating positive coping strategies for communities and ecosystems.[1]

Climate change mitigation

Actions that reduce the rate of climate change, including limiting or preventing greenhouse gas emissions and removing those gases from the atmosphere.[2]

Climate justice

Responses to the climate crisis that address the disproportionate impact of climate change on marginalised groups, including girls and women, people of colour, Indigenous peoples and low-income communities and countries.

Climate resilience

The ability to absorb, adapt and transform in the face of climate-related hazardous events, trends or disturbances.

Climate vulnerability

The susceptibility to, or inability to cope with, the negative effects of climate change.

Conference of Parties (COP):

The main decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC). Every country that has ratified the convention participates in COP, where the parties review progress towards the convention and decide how to implement it. COP occurs every year, unless the parties decide otherwise. The first COP meeting occurred in Berlin, Germany in March 1995. In November 2021, the U.K. government will host the 26th United Nations Climate Change Conference (COP26).

Gender-equal education

Ensuring that girls can access and complete education on the same terms with boys and that all aspects of education — including curriculum content and learning materials, learning environments, teacher practice and school management — promote gender equality.

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.

Paris Agreement

An international treaty on climate change adopted by 196 states and the European Union in 2015. It commits all parties to keeping the rise in global temperatures to well below 2°C higher than pre-industrial levels and to taking all measures to limit temperature rise to 1.5°C. Under the agreement, all parties have to put forward plans through Nationally Determined Contributions (NDCs) to meet this commitment.

Sustainable values

Values compatible with a sustainable way of living, including equality, care, stewardship and collaboration. People express sustainable values through individual behaviour, interactions with the natural world and decision-making within institutional structures.

United Nations Framework Convention on Climate Change (UNFCCC)

An international agreement adopted at the 1992 Earth Summit in Rio de Janeiro. The agreement aims to prevent "dangerous" human interference with the climate system. 197 countries have now ratified the convention.

Executive summary

The world is on the brink of a climate and ecological catastrophe.

Since the mid-20th century, human activity that produces greenhouse gases — particularly carbon dioxide — has contributed to a rapid warming of our world, resulting in the warmest decade on record from 2010–2019.[3] The disastrous impacts of global heating include:

- **More frequent and severe droughts, which lead to greater food insecurity and water scarcity, particularly across countries in sub-Saharan Africa;[4]**

- **An increasing number of people displaced directly due to rising sea levels and extreme weather or indirectly due to climate-induced conflicts; [5]**

- **Degradation of ecosystems and loss of biodiversity, which humans and other species depend on for survival;[6] and**

- **Emergence of new zoonotic diseases (infectious diseases spread from animals to humans) as human activity destroys wildlife habitats and forces animals into greater contact with humans.[7]**

This year marks a turning point. If governments don't take urgent action to address the climate crisis, they will cause irreversible damage to our planet.[8] As leaders gather in 2021 to address the climate crisis at the 26th United Nations Climate Change Conference (COP26) and other events, **they must not overlook one of the most powerful yet underused strategies in the fight against climate change: providing girls with 12 years of quality education.[9]**

As this paper shows, the climate crisis disproportionately affects girls' access to education. **Malala Fund estimates that in 2021 climate-related events will prevent at least four million girls in low- and lower-middle-income countries from completing their education.**

If current trends continue, by 2025 climate change will be a contributing factor in preventing at least 12.5 million girls from completing their education each year.[10]

Yet, realising every girl's right to 12 years of free, safe, quality education has the potential to help communities not only better withstand and adapt to the effects of climate change — but also reduce the rate and impact of global warming.

When girls go to school, they learn the skills to overcome climate-related shocks, like the critical thinking capabilities needed to process and act on the risk of weather reports.[11] Countries that have invested in girls' education have suffered far fewer deaths from droughts and floods than countries with lower levels of girls' education. Additionally, if every girl was able to exercise her sexual and reproductive health and rights through quality education and had access to modern contraception, it could reduce total emissions from fossil fuels by 37%–41% by the end of the century.[12] [13]

Furthermore, education that is gender-equal — that provides the same educational opportunities for boys and girls and fosters equal values, structures and relations of power — can be a powerful tool in climate action. Projections show that increasing gender equality through investment in education will lead to stronger and more equitable climate adaptation efforts, improved mitigation of greenhouse gas emissions and greater climate resilience in societies and communities.[14]

This paper presents the connections between girls' education, gender equality and climate change. It recommends how governments can improve girls' access to education and transform education systems to help all students thrive in a climate-affected world and create a greener, fairer future.
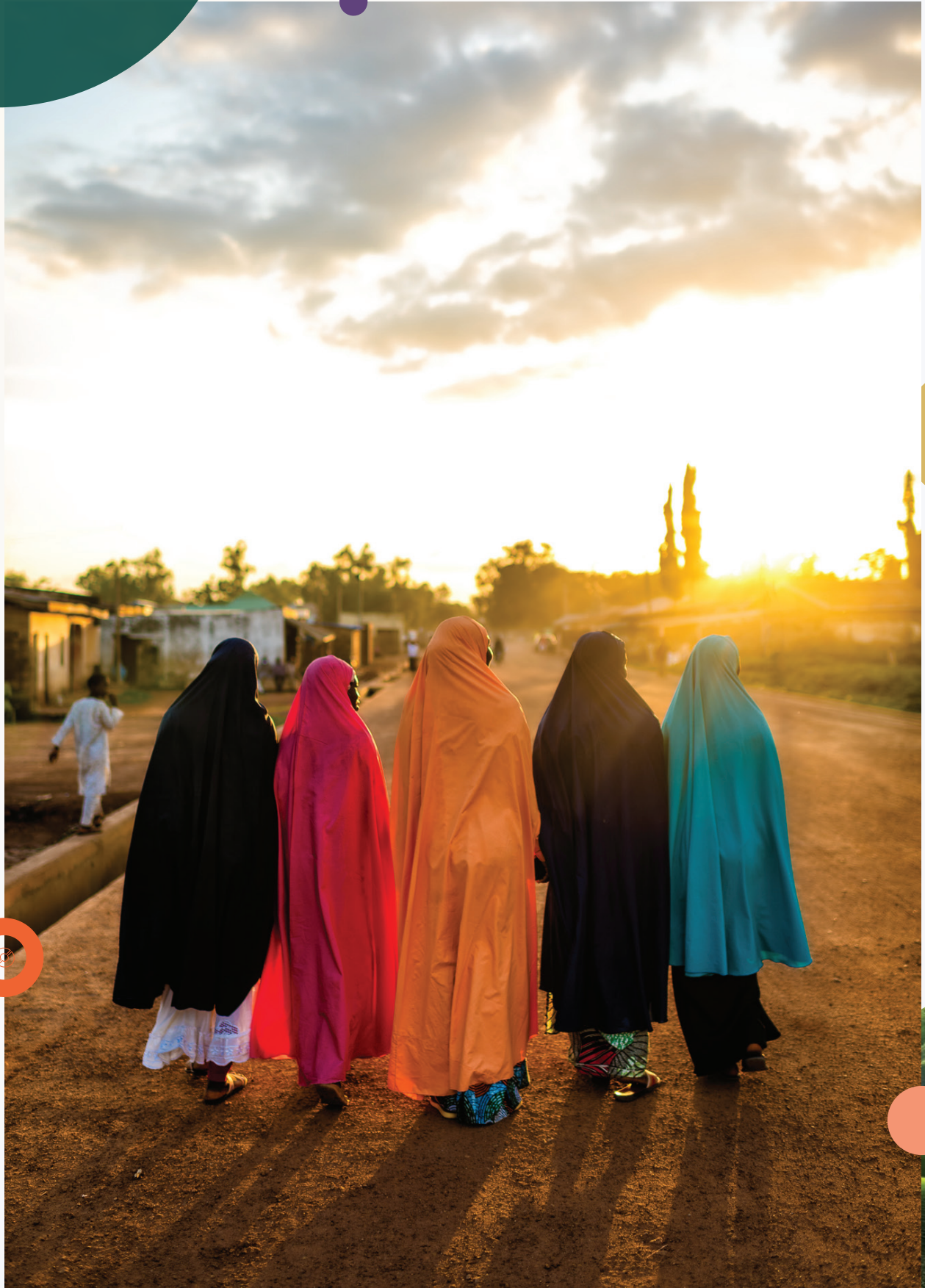
Introduction

By treating climate change, girls' education and gender inequality as separate crises, governments fail to recognise that climate action helps girls stay in school, and gender-equal education is good for the climate in turn.

This paper presents how governments can take coordinated action on these issues. It introduces the Gender-Equal Green Learning Agenda, a new framework to help every girl go to school and all students learn the tools, skills and values they need to lessen the effects of climate change on their communities, adopt pro-environmental behaviours, thrive in the green labour market and take action to achieve climate justice.

● **Part 1**
outlines the origins of the climate crisis, explaining that government solutions to climate change need to go beyond technical innovation to also address the inequalities at the centre of the climate crisis.

● **Part 2**
focuses on the impact of climate change on girls' education, highlighting new research that estimates that in 2021 climate-related events will prevent at least four million girls in low- and lower-middle-income countries from completing their education. If current trends continue, by 2025 climate change will be a contributing factor in preventing at least 12.5 million girls from completing their education each year.[15] It shows that we cannot achieve 12 years of free, safe, quality education for every girl without climate action.

● **Part 3**
demonstrates how government investment in gender-equal education — particularly through the secondary level — can help countries not only adapt to and mitigate the effects of climate change but also reduce the rate and impact of global warming.[16]

● **Part 4**
introduces the Gender-Equal Green Learning Agenda, a new framework to help leaders address the climate crisis through education. The agenda proposes education reforms that will help every girl access education and teach all students the knowledge, skills and values needed to speak out and challenge the social and economic inequalities fuelling the climate crisis.

● **Part 5**
identifies how governments can begin to implement the Gender-Equal Green Learning Agenda and take coordinated action on climate change, gender equality and girls' education at milestone events in 2021.

1

The origins
of the climate
crisis

Despite decades of overwhelming scientific
evidence of climate change induced
by human activity and its catastrophic
effects on our planet, leaders have failed
to take necessary action, resulting in
the current climate emergency.

Under pressure from climate groups, environmental scientists and leaders of countries most affected by climate change, the majority of the world's governments have signed the Paris Agreement, committing 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. The United Nations Intergovernmental Panel on Climate Change (IPCC) — the recognised global authority on climate science — has emphasised the necessity of hitting the lower end of this target. Restricting temperature rise to 1.5°C would limit the occurrence of extreme weather events, reduce the risks associated with rising sea levels and provide greater protection to ecosystems and biodiversity, minimising vulnerable communities' exposure to the more severe impacts of climate change.[17] [18] Yet, even in the most optimistic scenario, scientists are projecting a 2.1°C rise by the close of the century unless governments do more.[19]

Governments have attempted to curb global warming and its consequences through a series of technical solutions like solar power and innovations in energy efficiency. But these measures alone are not enough to avert the climate emergency. They must also address the underlying causes of the climate crisis, reversing the exploitative patterns that have brought us to the brink of catastrophe and forced those who bear the least responsibility for climate change to shoulder its worst impacts.

These patterns include:

Economic growth at the cost of environmental sustainability.

To date, economic growth has relied heavily on the extraction and consumption of natural resources and burning of fossil fuels. This approach has pushed the systems that support life on our planet beyond their natural boundaries, damaging human livelihoods and destroying ecosystems.[20] Over the past

"Where I was going to school, for the most part, there was never any actual information within the curriculum about the climate crisis. And the fossil fuel industry was 100% something that was looked at as good. It was economically smart to want those things and to admire those things and view them as solutions for convenience. But then outside of school, I was also like, oh, they're desecrating my land and digging up people's bones to build pipelines."

— Tokatawin Iron Eyes
Indigenous youth advocate and climate activist[27]

Read more from Tokatawin on why the climate movement needs to listen to Indigenous voices in Assembly, Malala Fund's digital publication and newsletter for girls.

50 years economic growth has quadrupled and the extraction of materials to meet consumption demands has tripled. Natural resource extraction now accounts for more than 90% of global biodiversity loss and water stress (when the demand for water exceeds the available amount) and approximately half of global greenhouse gas emissions.[21] The material consumption of high-income countries is 13 times the level of low-income countries, with at least a third of high-income countries' materials coming from other parts of the world.[22]

Countries' emissions levels have changed over time due to their growth, industrial strategies and coal consumption patterns.[23] Recent data shows emerging economies emitting more carbon than in the past, but many of today's large annual emitters — such as India and Brazil — are not large contributors in a historical context.[24] The U.S. has contributed 25% of all global emissions since 1751, emitting more CO2 than any other country to date. China, the world's second biggest historical contributor, is responsible for 12.7%.[25] Today, the top 10 highest-emitting countries are responsible for over two-thirds of global emissions each year, while the 100 least-emitting countries contribute just 3%.[26]

Colonisation and racial discrimination.

White colonising countries have continually exploited the land and labour of non-White people in order to extract wealth from nature. From the 15th–20th century, western European countries and the U.S. colonised and forcibly removed a majority of the world's nations in Africa, the Americas, the Middle East and Asia, using White supremacy to justify their actions.[28] [29] The invaders killed, enslaved and dispossessed people — particularly Black and Indigenous peoples — in order to access natural resources for profit with little consideration of the consequences for local populations or the environment.[30]

For example, British colonialists relied on indentured labour to ensure a plentiful and cheap supply of rubber during the Industrial Revolution, leading to the destruction of large areas of rainforest in the Malay Peninsula at the expense of local ecosystems.[31] From the 15th–19th century, government-backed Portuguese,

Dutch and British companies cleared forests in Brazil and the Caribbean for large-scale sugar cane plantations using the labour of enslaved Africans. This destruction of biodiversity through monocropping impoverished the soil, and its effects are still felt in the Caribbean.[32]

Gender inequality.

The same systems that have depleted Earth's natural resources also depend upon and reinforce patriarchal norms and values that discriminate against girls and women and assign unequal gender roles. Women taking on socially-prescribed unpaid and often invisible work as caregivers and homemakers enables economies to function as they do today.[33] Estimates suggest that the economic contribution of this work — performed full-time by 606 million working-age women and just 41 million working-age men — is around $10 trillion a year, which accounts for 13% of global growth.[34] These same unpaid care responsibilities — along with lack of access to rights like education, reliance on natural resources for their livelihoods and the fact that women's jobs often pay less than men's — increase girls' and women's exposure to climate-related risk and impact their ability to adapt, prevent or recover from it.[35] For example, four out of every five people displaced by climate change are female.[36] Intersecting inequalities women may face, like income, sexual orientation, class or caste and race, compound their vulnerability.[37]

A long-term, sustainable approach to stopping climate change must go beyond technical innovation to address the inequalities and exploitative patterns at the root of the crisis and promote greater social justice.

As the window for action narrows, this paper highlights an effective yet overlooked solution that could address the climate crisis at its source: gender-equal education. By ensuring all students have the same opportunities to go to school and learn gender-equal, sustainable values and green skills, governments can better meet the technical challenges of climate change and dismantle the systems that drive it — creating a greener, fairer future.

2

The impact of climate change on girls' education

As countries contend with rising temperatures, the climate crisis threatens girls' education around the world.

Climate-related events like flooding, droughts, storms and increased exposure to zoonotic diseases impede girls' ability to go to school, particularly in the poorest countries and most marginalised communities.

The fallout from these incidents amplifies the inequalities girls face — including poverty, discriminatory gender norms and increased household responsibilities — and further limits their access to 12 years of education.[38]

Vulnerable households often cope with climate shocks and stresses by pulling children out of school, usually starting with girls.[39] For example:

- **Girls in vulnerable households are more likely to leave school to get married in times of weather-related crises** to help ease the burden of scarce household resources.[40] The United Nations reported an increase in the number of girls sold into marriage following the droughts in Ethiopia in 2010–2011 in exchange for livestock as families struggled to cope with extreme drought conditions.[41]

- **Families often withdraw girls from school or send them to school less frequently during times of drought** because gender norms dictate that fetching water falls to girls and women.[42] A study in Botswana found that 70% of children who dropped out of school during drought were girls, and 56% of girls reported travelling longer distances than usual to fetch water, which took more time out of their day.[43]

Events linked to climate change can lead to interruptions in learning that disproportionately impact girls. For example:

- **Drought can make girls more likely to miss school when on their periods** due to the lack of water to maintain menstrual hygiene.[44] A 2015–2016 assessment of the impact of drought in India found that water hand pumps had dried up in approximately 60%–80% of schools surveyed in Madhya Pradesh, restricting the number of water, sanitation and hygiene facilities available to girls.[45]

- **Climate-related events can lead to school closures or increased migration, which disproportionately affect girls.** This can result in prolonged absences from school. In 2010 heavy monsoons led to devastating floods that destroyed 11,000 schools in Pakistan; once schools reopened, fewer girls reenrolled than boys.[46] In Somalia, when families migrated from rural to urban areas in 2018–2019 as a result of flooding, drought and conflict, girls' enrolment rates dropped from 45% to just 29%. In contrast, boys' enrolment rose following displacement from 29% to 41%.[47]

- **In the event of weather-related school closures, girls are less likely than boys to attend temporary school facilities** because of families' fears that their daughters could get harassed or experience violence on their journey to or from the temporary facility.[48] For example, in Kenya where 61 mobile schools were set up in response to drought in 2013, findings suggest these alternative provisions only supported boys' education and did not adequately address families' fears about girls' safety.[49]

- **Changes in climate can alter the range and reach of diseases that humans are exposed to, resulting in reduced school attendance and increased dropout rates for girls.** Malala Fund estimates that across low- and lower-middle-income countries as many as 20 million more secondary school-aged girls could be out of school after the COVID-19 pandemic.[50] This is just one example of an increasing number of zoonotic diseases taking hold as human activity destroys wildlife habitats and forces animals into greater contact with humans.[51]

Where does climate vulnerability compound girls' education challenges?

Malala Fund has analysed the correlation between climate vulnerability and girls' education. Our new research shows that the countries climate change affects the most also have poor girls' education indicators. **Malala Fund estimates that in 2021 climate-related events will prevent at least four million girls in low- and lower-middle-income countries from completing their education.** If current trends continue, by 2025 climate change will be a contributing factor in preventing at least 12.5 million girls from completing their education each year.[52]

For the first time we have combined our annual Girls' Education Challenges Index (GECI), which identifies the countries where it is most challenging for girls to access education, with the widely respected ND–GAIN Index, which summarises a country's vulnerability and resilience to climate change and other global challenges (see the appendix for more details on the GECI and the ND–GAIN Index). In doing so, we have produced a composite index that tells us where girls face the greatest threats to their education and are most vulnerable to climate change (see table on pg. 12).[53] In each of these countries, climate change compounds existing education challenges for girls.[54] Together, these countries account for 280 million school-aged girls.

Malala Fund Girls' Education and Climate Challenges Index

This year's GECI shows that sub-Saharan Africa — the region least responsible for our current climate crisis — faces the greatest challenges in terms of climate change vulnerability and realising every girl's right to education. The international community must prioritise financial and technical support to sub-Saharan Africa, as well as all other countries shown in this table, to meet the challenges of climate adaptation and resilience and achieve 12 years of education for all girls.

| RANK	COUNTRY	TOTAL NUMBER OF SCHOOL-AGED GIRLS
1	Nigeria	30,072,348
2	Cabo Verde	60,864
3	Chad	2,760,507
4	Guinea	2,087,149
5	Mali	3,073,716
6	Benin	1,863,349
7	Central African Republic	839,321
8	Togo	1,287,519
9	Cameroon	4,164,253
10	Senegal	2,614,896
11	Angola	5,297,243
12	Burkina Faso	3,364,107
13	Nicaragua	683,366
14	Mauritania	675,381
15	Kenya	7,944,801
16	Niger	3,870,795
17	Myanmar	5,232,929
18	Zambia	2,859,489
19	Tanzania	9,477,354
20	Côte d'Ivoire	4,107,364
21	Afghanistan	5,943,448
22	India	141,809,192
23	Bangladesh	17,691,720
24	Sudan	6,244,298
25	Lao PDR	881,108
26	Solomon Islands	101,050
27	Somalia	2,492,466
28	Malawi	3,030,314
29	Uganda	7,971,287
30	Sri Lanka	2,199,137
TOTAL		**280,700,771**

Heat map: Climate change threats to girls' education

Visual representation of the composite index highlighting girls' education challenges and climate vulnerability and resilience in low- and lower-middle-income countries. Darker shading indicates a greater likelihood that climate change will compound the barriers to girls' education now and in the future.

3.48

GIRLS' EDUCATION AND CLIMATE CHALLENGES INDEX SCORE

7.81
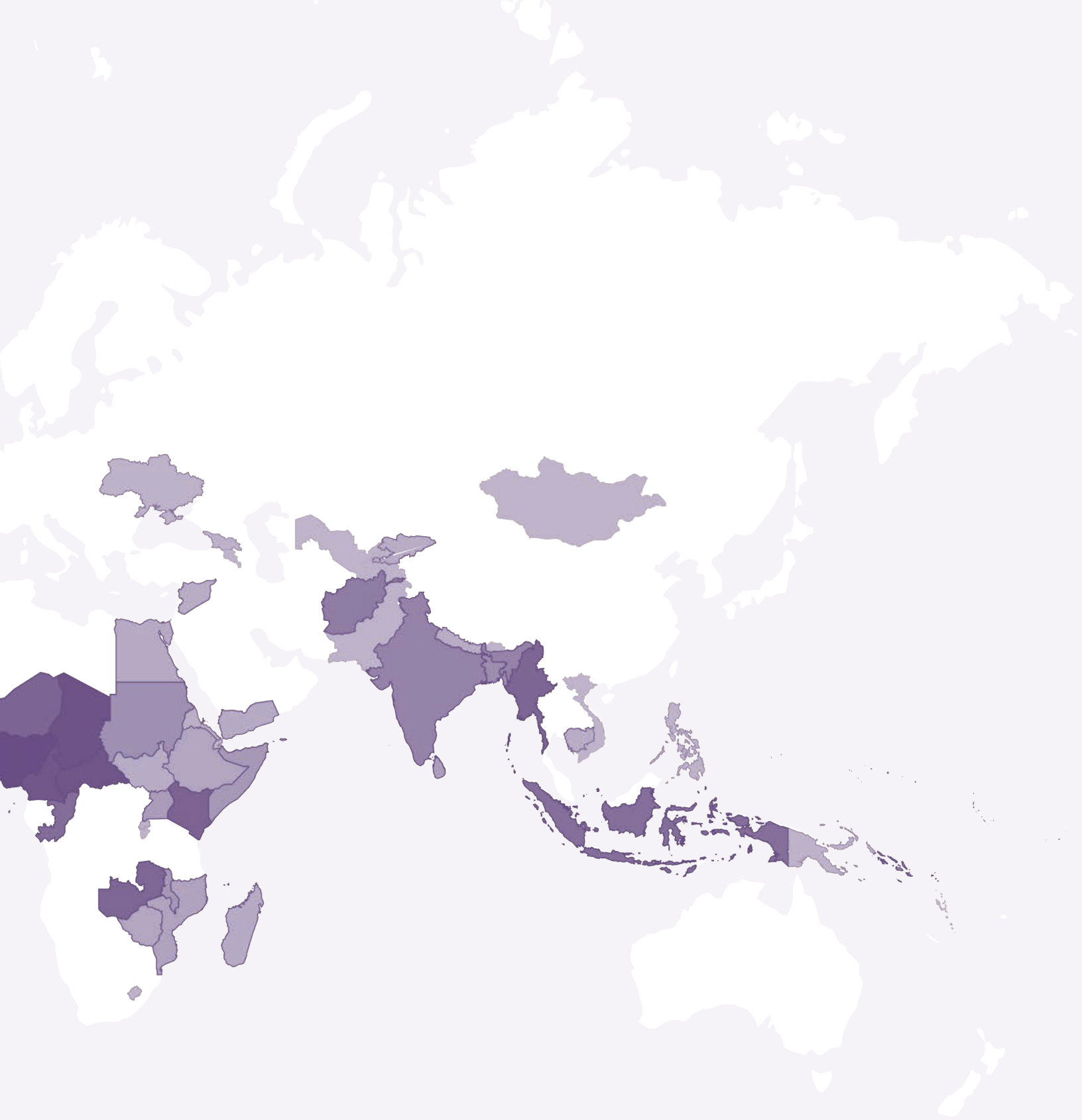
The legacy of colonisation and the climate crisis

The world feels the legacy of colonisation and its role in the climate crisis to this day; the countries and peoples that have contributed least to the problem feel its effects the most. This imbalance in emissions started during the Industrial Revolution when countries like France, Germany, the U.K. and the U.S. began burning large amounts of fossil fuels to power machinery while many colonised countries' economies remained dependent on exporting primary products, emitting less carbon.[55] Today, the countries that bear 80%–90% of the social cost of carbon emissions (due to their greater exposure to natural disasters, weaker infrastructure and lower capital reserves) have contributed less than a quarter of present-day emissions.[56] These countries, largely in sub-Saharan Africa, Latin America and Asia, also hold the least influence in determining global responses to climate change because of their lack of economic power.[57]

BOX 1

"It's essential to understand the connection between social justice and environmentalism when discussing the climate movement. Racial injustice extends far beyond police brutality, prejudiced remarks and discrimination within the criminal justice system. It's everywhere. It's in environmental racism and the poor quality of our air and water. It's in the segregated and poorly funded communities we live in. It's in our limited access to sustainable resources. Environmentalists must not only reconcile with the racist and exclusionary history of environmentalism but also address the fact that climate change disproportionately impacts communities of color."

— Lauren Ritchie
Bahamian climate justice activist[58]

Read more from Lauren on why environmental activism needs to be intersectional in Assembly, Malala Fund's digital publication and newsletter for girls.
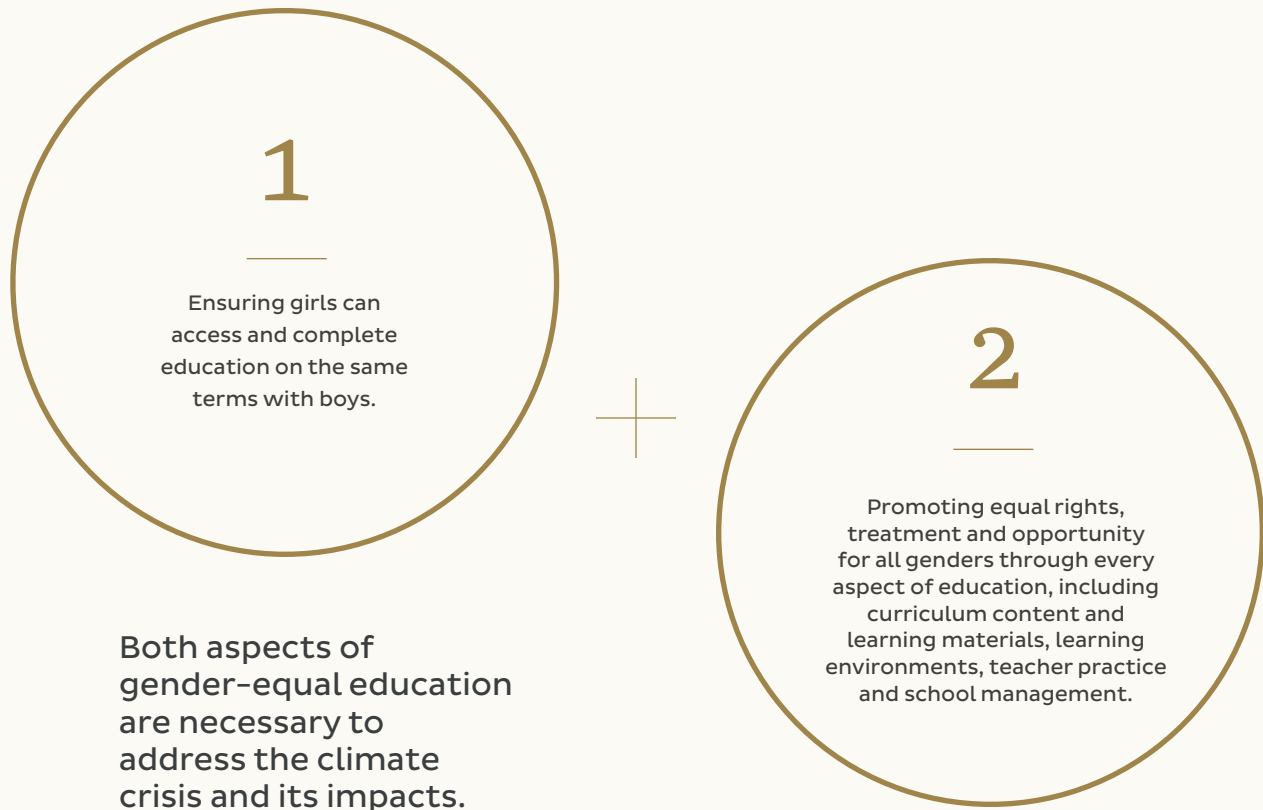
3

How gender-equal education can fight climate change

The trends and figures outlined in part 2 make clear that governments can't realise 12 years of education for every girl unless they address climate change. Part 3 makes the case that gender–equal education is a powerful tool for challenging the scientific and structural causes of the climate crisis.

There are two critical components of gender-equal education:

1

Ensuring girls can access and complete education on the same terms with boys.

Both aspects of gender-equal education are necessary to address the climate crisis and its impacts.

2

Promoting equal rights, treatment and opportunity for all genders through every aspect of education, including curriculum content and learning materials, learning environments, teacher practice and school management.

First, when education equips girls with the skills and competencies they need to respond to the challenges of climate change, it improves climate adaptation, mitigation and resilience.

- When girls receive 12 years of quality education, they are more likely to have the skills to withstand and overcome shocks resulting from extreme weather events and changing weather cycles, in turn helping their families and societies adapt to the worst effects of climate change.[59] [60] Girls with literacy, numeracy, critical thinking and problem-solving skills help families better process and act on information about risk, like weather reports.[61]

- There is growing evidence that when education teaches girls to lead, participate and make decisions, it results in pro-environmental and sustainable outcomes for the wider community.[62] Evidence from Nepal and India suggests that women's involvement in forest management in Asia yields better forest health.[63]

- The increased political participation and status of women — strongly associated with their level of education — has a positive effect on a country's environmental protection efforts.[64][65]

- Ensuring girls' access to education is a sustainable and cost-effective way to improve societies' resilience to climate change. Countries that have invested in girls' education have suffered far fewer losses from droughts and floods than countries with lower levels of girls' education.[66] A 2013 study analysing the links between girls' education and disaster risk reduction projected that if 70% of women ages 20–39 received at least a lower-secondary education, disaster-related deaths in 130 countries could reduce by 60% by 2050.[67] Furthermore, the ND-GAIN Index shows an association between more schooling for girls and a country's resilience to climate disasters. For each additional year of education that girls acquire, countries' resilience to climate disasters increases on average by 1.6–3.2 points on the ND-GAIN Index.[68]

Second, ensuring every girl can exercise their sexual and reproductive health and rights through quality education and access to contraception could reduce the rate and impact of global warming.

- Recent estimates cite combined action on girls' education and sexual and reproductive health and rights (see box 2) as the most cost-effective way to limit temperature rise to 2°C higher than pre-industrial levels by the end of the century. Analysis suggests that this could reduce carbon emissions by as much as 85.4 gigatons by 2050, making it four times as effective as solar power and the second-most effective climate solution in terms of estimated gigatons of carbon avoided.[70]

Third, enabling girls to study science, technology, engineering and mathematics (STEM) on equal terms with boys ensures they can contribute to and thrive in a low-carbon economy.[78]

- Investment in girls' STEM education can encourage girls and women to participate in and lead innovations in climate-resilient and green technologies, bringing a gendered perspective that supports more effective and inclusive solutions.[79]

- Girls' increased participation in STEM classes — subjects important for jobs in traditional green sectors — ensures there is a large, skilled workforce to support a successful transition to a low-carbon economy.[80]

Fourth, when education fosters gender-equal values, structures and relationships, it can help transform individuals' and societies' relationships with people and the planet, addressing the drivers and unequal impacts of climate change.[81]

- Research shows that countries with higher levels of gender equality also have high levels of environmental well-being.[82]

- Education increases women's socioeconomic power in households and wider society relative to men. This, in turn, reduces gender disparities in mortality rates from climate-related extreme weather events.[83]

Gender-equal education improves societies' climate change mitigation, adaptation and resilience. Part 4 proposes a framework for governments to implement gender-equal education along with climate education to help students develop the skills they need to thrive in a climate-affected world and interrogate and challenge the power dynamics that drive climate change and climate vulnerability.[84]

"I've seen the immediate threat — droughts, floods, extreme weather — to women. ... But I've also seen that those most vulnerable are marginalised from political and decision-making processes. The policymakers from South Asia who attended screenings of my films at conferences were almost entirely middle-aged men. We cannot address the climate crisis without ensuring women's participation and supporting Indigenous knowledge in policy."

— Sarah Jehaan Khan
Pakistani filmmaker[69]

Read more from Sarah on her work documenting stories from the front lines of the climate crisis in Assembly, Malala Fund's digital publication and newsletter for girls.
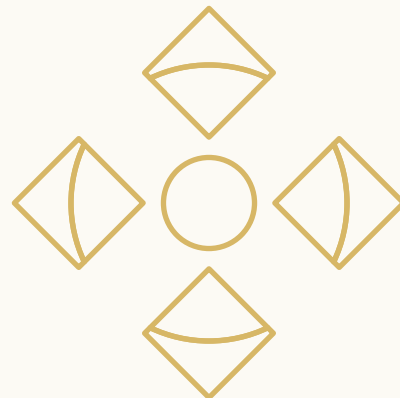
Girls' education, choice and voice

When girls go to school, they develop agency to make decisions about their own lives, including about their health and well-being.[71] They are better able to exercise their sexual and reproductive health and rights, especially in terms of choosing whether and when to marry and whether to bear children as well as the spacing between children. The World Bank's research suggests that universal secondary education for all girls could virtually eliminate child marriage and reduce early childbearing in many countries.[72] Other studies confirm that educated girls choose to have fewer children.[73] Estimates suggest that lower fertility rates — achieved as a result of meeting women's demand for contraception — could reduce total emissions from fossil fuels by 37%–41% by the end of the century.[74]

It is the right of all girls and women to make decisions about their own bodies, including to have as many or as few children as they want. But girls and women cannot exercise that right if governments do not provide free and accessible sexual and reproductive health services. Currently 214 million women in lower-income countries want to avoid pregnancy but aren't able to access contraceptives.[75] If governments met women's needs for modern methods of contraception, they would avert an additional 67 million unintended pregnancies annually, improve women's health and well-being and help girls stay in school longer.[76] [77]

BOX 2
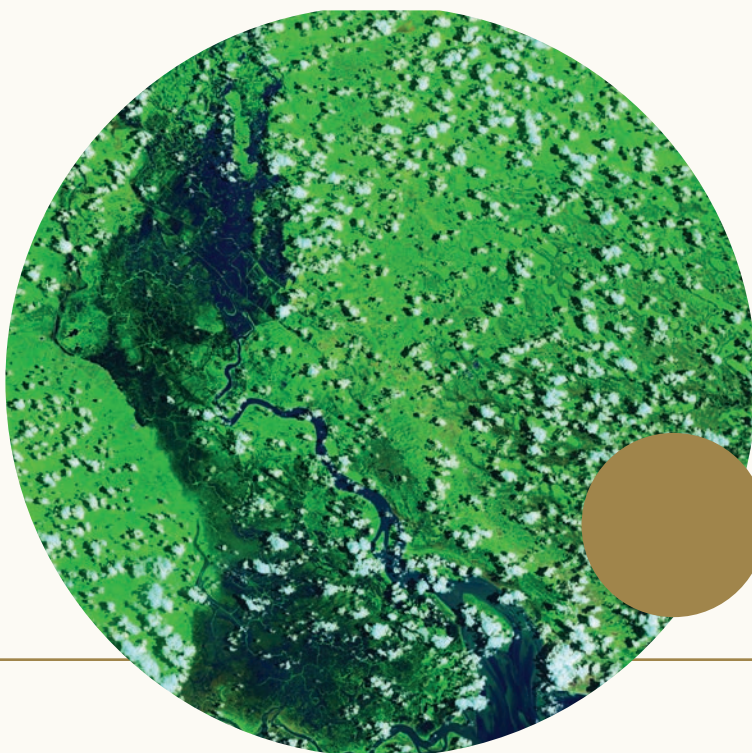
4

The Gender-Equal Green Learning Agenda, a new framework to help leaders address the girls' education and climate change crises

Part 4 introduces the Gender–Equal Green Learning Agenda, a new framework to help leaders address the climate crisis through education, based on research by the Brookings Institution.[85] **By implementing each pillar in the agenda, leaders can help teach students the skills and values they need to thrive in climate–resilient economies and challenge the social and economic inequalities fuelling the climate crisis.[86]**

The Gender-Equal Green Learning Agenda

PILLAR 1:
ACCESS
Getting all girls in school and learning for 12 years

PILLAR 4:
ACTIVISM
Empowering students to take action on climate justice

PILLAR 2:
SKILLS
Teaching girls an expanded vision of green skills

PILLAR 3:
VALUES
Promoting sustainable values through climate education

PILLAR 1

ACCESS: Getting all girls in school and learning for 12 years

As outlined in part 3, government investment in girls' education can help countries not only adapt to and mitigate the effects of climate change but also reduce the rate and impact of global warming. But despite numerous commitments from leaders, the world is not on track to meet Sustainable Development Goal 4 — ensure inclusive and equitable quality education and promote lifelong learning opportunities for all — by 2030.[87]

There are 129 million girls out of school, three-quarters of whom are secondary-school aged.[88] Up to 20 million more girls could be forced out

of school as a result of the COVID-19 crisis.[89] Poverty and harmful gender norms keep girls out of school, while underfunded education systems are unable to expand and address girls' needs. In low-income countries, just 2% of the poorest girls finish secondary school.[90]

Governments — with support from the international community — must act now not only to fulfil their commitment to provide quality education to every child but also to harness the transformative potential of education to address the climate crisis. They must increase investment in education, building schools, hiring teachers and ensuring that teaching and learning are free of gender bias and promote gender equality. They must also implement interventions and programmes to support marginalised girls, especially those affected by climate change and environmental degradation. Meanwhile, education systems have to become more resilient and adaptive to deal with disruptions caused by climate change, taking into account the ways climate change affects girls specifically.[91]

Although essential, these changes alone are not enough to create the conditions for greater climate justice. The following three pillars show how leaders can transform education to help girls and boys alike thrive in a climate-affected world and build a greener, fairer future.

PILLAR 2

SKILLS: Teaching girls an expanded vision of green skills

Climate change is changing workforce needs as countries evolve towards low-carbon, energy-efficient economies and adapt to a warmer world. To prepare for this future labour market, education systems must equip students with the technical skills necessary to pursue careers in traditionally green fields.[92] To date, governments have updated vocational education and training initiatives to prepare young people for green jobs in sectors like renewable energy, agroforestry, home adaptations and waste recycling.

However, too many girls are missing out on these opportunities because of persistent gender norms that prevent them from

studying or thriving in STEM subjects.[93] Bias against girls studying STEM begins in early childhood and continues through secondary and higher education; girls represent just 35% of higher education students enrolled in STEM-related subjects.[94] Governments and international organisations have initiated a number of programmes to try to address this gender imbalance.[95]

Addressing the gender gaps in STEM education will help prepare girls for jobs in traditionally green fields. However, students need a range of additional skills to help them and their future employers cope with rapid changes wrought by climate change and environmental degradation.[96] These skills include adaptability, critical thinking and reasoning, creativity, empathy, negotiation and problem-solving.[97] These kinds of skills are often taught through "life skills education," which education policymakers have not linked to the climate education agenda to date. Many education systems view the development of these skills as optional, so they largely offer them through non-formal education or extracurricular activities.[98] Governments need to teach girls these skills alongside STEM subjects and technical and vocational training for traditionally green forms of work.

This expanded vision of green skills will not only help girls embrace — on equal terms with boys — any opportunities that a low-carbon, climate-resilient economy offers, it will also help them develop critical enquiry and commitment to action that can lead towards climate justice and a green economy that benefits everyone (see box 3). Pillars 3 and 4 further explore how education can transform our relationship with the planet and enable students to better navigate — and shape — their rapidly-changing contexts.

PILLAR 3

VALUES: Promoting sustainable values through climate education

Recognising its importance in the fight against climate change, young people are calling on leaders to ensure students receive quality climate education. In November 2020 at the Mock COP26, over 330 youth

A people-centred approach to a green economy

A people-centred approach to a green economy not only moves away from extractive and polluting activities but also moves towards an economic model that is centred on racial, gender, economic, environmental and intergenerational justice.[99] It prioritises care of each other and of the planet. In doing so, it promotes a relationship with the environment that is no longer characterised by exploitation but by stewardship and respect. It expands green jobs to include any that contribute to "the well-being and flourishment of present and future generations; upholds human rights, including women's rights and the rights of Indigenous populations and peoples of color; and supports the regeneration of the natural world."[100]

Governments are beginning to consider these kinds of approaches as they work out how to recover after COVID-19. In 2020, Hawaii's State Commission on the Status of Women proposed a feminist economic recovery plan for COVID-19 that prioritises care and caregiving.[101] In Finland and New Zealand, governments are encouraging employers to move to a four-day working week as a socially responsible and caring way to maintain employment levels in an economic recession while also freeing up time for home and community life.[102] And Amsterdam's municipal government has adopted a new framework to guide decisions about city development that explicitly aims to promote citizens' well-being while respecting environmental limits. For example, in a new social housing programme enacted to meet demand for affordable rents, the municipality is regulating construction to ensure builders use recycled and bio-based materials, like wood.[103] [104]

BOX 3
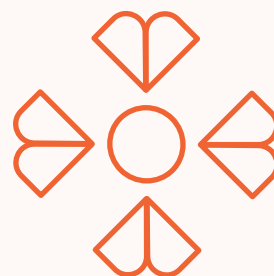
delegates from over 140 countries signed a treaty of demands aimed at world leaders to address the climate crisis. Key among their demands was increased action on climate education.[105]

Education policymakers — particularly in industrialised countries — are increasingly incorporating climate change education (CCE) and education for sustainable development (ESD) into national curriculums. Such efforts usually focus on educating students about climate change and its solutions, as well as teaching them skills and attitudes that will help them adopt more sustainable behaviours and practices through greener problem-solving.[106] [107] At its best, this kind of education prompts students to engage with the sociopolitical and human dimensions of climate change and reassess their values, creating feelings of personal responsibility to change their behaviours and take climate action.

One influential study looked at the long-term impact of education that connected climate science to students' lives, provided them with the chance to create change in a community of their choice and fostered a culture devoted to stewardship and action. It found that, even five years later, the course had influenced students' behaviour and decision-making related to waste disposal, home energy suppliers, transportation and food choices which reduced their personal emissions. Modelling based on the findings suggests that if just 16% of secondary students in middle- and high-income countries today received this kind of climate education, it could lower their collective carbon footprint by nearly 19 gigatons over the next 30 years.[108] Based on these projections, if leaders ensure all children receive quality climate education, the goals of the Paris Agreement may be within reach.[109]

This example hints at the transformative potential of a values-based approach to climate education. However, with its focus on personal emissions, it

"Leaders can start [addressing the climate crisis] by revising the education curriculum by adding climate education so that students can grow up and understand the value of conserving the environment. The schools can only follow what the leaders have put in place."

— Evelyn Acham
Ugandan climate activist[113]

Read more from Evelyn on the need for climate education and centring African voices in the climate movement in Assembly, Malala Fund's digital publication and newsletter for girls.

stops short of identifying the ways education can foster the collective activism necessary to realise a more climate-just world. Indeed, critics suggest that CCE and ESD — as currently delivered — are too focused on individual behavioural change as the solution to climate change, instead of encouraging students to interrogate the structural causes of the crisis or its unequal effects. This lack of engagement with the unsustainability of our social and economic systems has even led climate justice campaigners to criticise traditional forms of climate education for "greenwashing" behaviours.[110]

To address these concerns, education policymakers must supplement traditional climate education with a bolder curriculum, one that helps students make a personal connection to the issue of climate change, interrogate its sources and adopt new ways of thinking and being.[111] Climate education should also provide students with opportunities to put these values — which include equality, care, stewardship and collaboration — into action.[112]

PILLAR 4

ACTIVISM: Empowering students to take action on climate justice

To advance climate justice, education must teach students to collectively challenge the underlying causes of climate injustice, including extractivism, racial inequality and gender discrimination.[114] [115]

Research shows that a participatory, democratic approach to learning is key to encouraging students to act on the knowledge they acquire.[116] This kind of education is not about concepts and facts, but rather about stimulating reflection on the causes and effects of climate change through exchanges with peers.[117] Participatory learning

"Around the world, young women are fighting for our future. Our activism takes different forms but we are working together towards the same goal: changing political and economic systems to prioritize people and our planet."

— Greta Thunberg
Swedish climate activist[126]

Read more from Greta on the young women leading the climate movement in Assembly, Malala Fund's digital publication and newsletter for girls.

helps students develop critical and independent thinking skills and increases their sense of political agency, allowing them to imagine a different future and take action towards it.[118] Students taking action based on learning these skills and competencies holds the largest potential benefits for the environment.[119]

Analysis in the U.S. finds that where teachers take a participatory approach in their classrooms, allowing debate and encouraging civic engagement, students are more likely to take action against climate change outside of school.[120] In Colombia, students from Hojas Anchas School — a member of the New Schools (Escuelas Nuevas) programme that promotes a participatory and democratic approach to learning across the curriculum — not only demonstrated more pro-environmental behaviours but also took action to promote sustainable practices among adults, including participating in local village government meetings.[121]

Activism by young people can inspire government action and advance climate justice on a larger scale. In India, 15-year-old Aditya Mukarji convinced hotels and restaurants in New Delhi to replace more than 500,000 plastic straws with ecological alternatives in 2018.[122] In Colombia, a group of young people successfully sued the government for failing to honour its commitment to tackling climate change; in April 2018 Colombia's supreme court found the Colombian government liable for not halting the increasing deforestation of the Amazon forest and ordered the government to build an action plan to stop deforestation within four months of the ruling.[123] The youth-led Fridays for Future movement estimates that more than 9.6 million strikers in 261 countries have participated in climate strikes since September 2019.[124] Numerous commentators have acknowledged that this movement has changed the public discourse on climate change and provoked greater climate action.[125]

A participatory, democratic approach to education recognises that climate change and its solutions are political as well as technocratic.[127] It prompts students to consider their relationships with others and the natural world. It encourages students to consider a range of solutions to the climate emergency, including those that depart from the view that development depends on extractive economic growth.[128]

5

Recommendations for realising a greener, fairer future

Almost two-thirds of people around the world view climate change as a global emergency, but leaders have failed to respond accordingly.[129] With every year of insufficient action, it becomes less likely that we can keep the global temperature rise below 2°C higher than pre-industrial levels, let alone meet the IPPC's preferred target of limiting temperature rise to 1.5°C.

Meanwhile lower-income countries are already dealing with disastrous climate impacts like rising sea levels, drought and desertification and food insecurity, many of which affect women and girls disproportionately.[130] **This is why Malala Fund calls on the international community and national governments to deliver climate justice for all (see box 5).**

The climate crisis has disastrous effects on girls' education, with girls in lower-income countries and the most marginalised communities facing the greatest risk. Even if girls are able to go to school, it fails to adequately equip them with the skills, knowledge and values to thrive within the context of a changing climate and challenge the social and economic inequalities fuelling the climate crisis.

Yet as this report demonstrates, government investment in gender-equal education can help countries not only adapt to and mitigate the effects of climate change but also reduce the rate and impact of global warming. The Gender-Equal Green Learning Agenda offers countries a strategy to take action on girls' education and climate change to create a greener, fairer future for all. Malala Fund urges governments to begin implementing this framework through three immediate actions:

1. At COP26, issue a high-level political declaration proclaiming 2022 a year of action on climate education.

- **Reenergise the global community around commitments to climate education** made at the 1992 Rio Earth Summit and repeatedly reiterated since, declaring 2022 a year of action on climate education.

- **Make climate change a core curriculum subject** within national climate change learning strategies (see following recommendations).

- **Commit to advancing the Gender-Equal Green Learning Agenda** through measures such as reforming climate change education curriculums and training educators to teach students the skills they need to build adaptive capacity and promote greater climate justice (see pillar 2).

2 . **Work within the UNFCCC COP process to take coordinated action on gender equality, education and climate justice.**

In advance of and/or at COP26, all governments should:

- **Update Nationally Determined Contributions (NDCs)** to recognise the contribution that girls' education makes to climate adaptation and mitigation strategies (see box 4).

- **Ensure that NDCs commit to a twin-track approach to making education systems gender-equal and resilient** so that girls do not drop out of or miss school due to climate-related events, like planning for emergency education provisions in ways that do not disadvantage girls.

- **Identify mechanisms that enable governments to better coordinate agencies** responsible for climate change adaptation and mitigation with the health and education sectors and incentivise multi-sectoral approaches to localise, coordinate and implement this agenda.

At COP28 in 2023 all governments should submit national climate change learning strategies that:[131]

- **Adopt an expanded definition of green jobs and green skills** to include care work and environmental stewardship and identify pathways to skills development for all green jobs through curriculum reform, teacher training and complementary initiatives to ensure girls' equal participation in relevant subjects, especially STEM.

- **Take a climate justice perspective, reorienting learning environments and teacher-student relationships** to promote co-construction of knowledge, critical enquiry and political agency — especially around power and inequality — and fostering the necessary values and capabilities in students for climate justice activism.

Nationally determined contributions

The Paris Agreement requires governments to set out their commitments and strategies to support the global warming and carbon emission goals in Nationally Determined Contributions (NDCs). Countries must submit new or updated NDCs every five years.[132]

As of December 2020, only 21 countries had submitted updated NDCs ahead of COP26.[133] Initial analysis suggests that these NDCs focus on lowering carbon emissions and do not give attention to adaptation strategies or education's contribution to either domain.

BOX 4

3. Seize the opportunity to rebuild better following the COVID-19 crisis, committing to a green, gender-just recovery that centres girls' education and climate justice.

- **Make economic choices** that lay the foundations of sustainable people-centred economies, including:

  - **Prioritising public investment** — not austerity measures — as the foundation of green economic recovery strategies; and

  - **Deploying economic stimulus measures** that invest in the use of renewable energy rather than fossil fuels.

- **Capitalise on the milestone events of 2021** such as the G7 Summit, the Commonwealth Heads of Government Meeting, the Global Partnership for Education Replenishment Conference and the U.N. General Assembly to make policy and financial commitments that ensure every child receives 12 years of education, access to sexual and reproductive health and rights and quality climate education.

- **Donors set out and commit to timelines for allocating 0.7% of Gross National Income (GNI)** in Overseas Development Assistance (ODA) and increasing the share of their ODA that targets gender equality as a "significant" or "principal" objective to 70% for education and 85% for climate change.[134]

Malala Fund and climate justice

Malala Fund recognises that the countries and communities that have contributed least to climate change often feel its effects the most, either in terms of extreme weather events or slow-onset impacts like desertification. These consequences of climate change are occurring now and are likely to become more severe in the future, impacting girls and their education.

Malala Fund therefore aligns with movements that call for global cooperation to achieve climate justice, urging wealthier countries to lead climate action and support lower-income countries to cope with climate impacts and transition to greener pathways. All countries must work to limit global warming to 1.5°C above pre-industrial levels. Higher-income countries must step up their domestic targets and provide new and additional public finance to help lower-income countries scale up mitigation and adaptation efforts, prioritising grants over loans to prevent debt distress.[135] And the international community must respect the leadership of the people the climate crisis affects the most, from heads of small island states to the girl activists leading climate campaigns around the world.

BOX 5

Acknowledgements

Appendix:
Malala Fund's Girls' Education and Climate Challenges Index

Index methodology

Malala Fund's Girls' Education Challenges Index (GECI) is a composite index that uses publicly available data on access, completion, learning outcomes and gender disparities in education in addition to wider contextual risks to analyse the relative challenges that girls in low- and lower-middle-income countries face in access to 12 years of quality education. Through the creation of deciles, the index assigns countries a score between 1–10 in each of these areas (with 1 being less challenged), after which the scores are aggregated and ranked.

The climate index variable uses gradient boosting prediction methods to predict the impact of climate-associated events on designated GECI indicators. Preprocessing of the data and data-mining procedures included segmentation and sorting of climate and natural factors using k-means clustering. The resulting segments provided further insight into the relationships between provided scores and metrics that increased the accuracy of the overall climate model.

For example, segmentation would enable the model to understand that a country that is near the coast and experiences earthquakes would also be the most likely to experience tsunamis and flooding. A country that is more centrally-located in a continent with a more arid climate would experience drought and flood events, but no tsunamis or cyclones. By using segmentation to preprocess the data and inform the final algorithm of these relationships, our model is better able to adapt to the unique climate change challenges countries face around the world.

When each country had a predicted score of climate impact, we ranked them according to socioeconomic status and then used that as an input for the final rankings. Because this list focuses on climate impacts, we gave the climate score and GECI score equal weight because the impact of climate events or any other disturbance, when significant, on education is highly dependent on the resiliency, strength of infrastructure and stability of the home country.

We created the Girls' Education and Climate Challenges Education Index score by taking the square root of the product of the two scores, equally contributing climate and girls' education factors found to be significant in segmentation and clustering.

Girls' completion rate estimate methodology

We used k-means clustering to determine organic trends within the historical data before imputing missing completion rates with logistic regression. Once we established completion rates, we ran the data through four separate forecasting methodologies: hierarchical, AutoARIMA, seasonal and regression for time series. Initially, we ran the data through the model without any climate variables included and assumed consistent impacts of climate change in historical data.

We utilised this resulting forecast as the baseline for any future assumptions to test education rates and null hypothesis. Next, we built the influential climate factors as determined in the previous phase in the algorithm with a weighting scale to account for changing and more intense climate events. We use the difference between the two forecasts (the delta) or the reduction in rate within completion rate as the assumed impact or influence specifically of climate on the girls' completion rates at a global scale, with a 95% confidence interval.

We estimated the number of girls affected by applying the derived delta to official projections of the total population of girls in that specific cohort (that is, those in the age range three–five years above the last intended age for that level of education) within each country.

The algorithms operate on a forecast horizon of 11, the hierarchical levels are at the economical and country level and we chose the champion algorithm via WMAPE.

To estimate the number of girls whose education will be affected by climate in the next five years, we used forecasting methodologies, building in all relevant factors, to estimate future completion rates. We then compared projected completion rates with imputed completion rates at base (2020) to derive deltas and applied these similarly to the relevant cohort's population projections.

We used deltas derived from comparing the two models to sense-check estimates, in order to verify consistency in terms of magnitude and direction.

A note on the ND-GAIN Index:

The ND-GAIN Country Index summarises a country's vulnerability to climate change and other global challenges in combination with its readiness to leverage private and public sector investment for adaptive actions. It uses two decades of data across 45 indicators.

The index assesses vulnerability by considering:

- The impact of the future changing climate conditions (exposure) on a country's society and its supporting sectors;

- How climate-related disturbances (sensitivity) impact people and the sectors they depend on; and

- The ability of society and supporting sectors to adjust to and reduce potential damage and respond to the negative consequences of climate events (adaptive capacity).

To assess overall readiness, the index considers three components: economic readiness, governance readiness and social readiness. Economic readiness refers to the investment climate that facilitates mobilising capital from the private sector. Governance readiness pertains to the stability of the society and institutional arrangements that contribute to investment risks. Social readiness refers to the social conditions that help society make efficient and equitable use of investment and yield more benefit from the investment.[136]

Extended Malala Fund Girls' Education and Climate Challenges Index (by region)

Sub-Saharan Africa

1	Nigeria	7.805
2	Cabo Verde	7.76
3	Chad	7.373
4	Guinea	7.333
5	Mali	7.327
6	Benin	7.32
7	Central African Republic	7.265
8	Togo	7.199
9	Cameroon	7.187
10	Senegal	7.174
11	Angola	7.102
12	Burkina Faso	6.944
14	Mauritania	6.925
15	Kenya	6.882
16	Niger	6.867
18	Zambia	6.829
19	Tanzania	6.779
20	Côte d'Ivoire	6.654
24	Sudan	6.419
27	Somalia	6.302
28	Malawi	6.299
29	Uganda	6.268
31	Mozambique	6.155
32	Liberia	6.128
33	Ethiopia	6.101
34	Zimbabwe	6.096
35	Comoros	6.084
36	Guinea-Bissau	6.066
39	Madagascar	5.959
42	South Sudan	5.892
49	Congo, Dem. Rep.	5.677
50	Eritrea	5.638
52	São Tomé and Príncipe	5.515
54	Sierra Leone	5.296
57	Rwanda	5.137
59	Eswatini	5.115
61	Lesotho	5.035
62	Gambia, The	4.969
64	Ghana	4.697
69	Burundi	4.249

East Asia & Pacific

17	Myanmar	6.8344
25	Lao PDR	6.346
26	Solomon Islands	6.32
41	Kiribati	5.934
45	Cambodia	5.802
51	Micronesia, Fed. Sts.	5.546
58	Papua New Guinea	5.12
60	Philippines	5.108
68	Korea, Dem. People's Rep.	4.275
70	Vietnam	4.214
73	Vanuatu	4.042
74	Mongolia	3.964
77	Timor-Leste	3.483

Europe & Central Asia

44	Kyrgyz Republic	5.836
53	Ukraine	5.343
56	Moldova	5.17
66	Uzbekistan	4.545
67	Tajikistan	4.527

Latin America & Caribbean

13	Nicaragua	6.941
47	Honduras	5.781
48	Bolivia	5.752
63	El Salvador	4.819
72	Haiti	4.078

Middle East & North Africa

37	Morocco	5.994
38	Egypt, Arab Rep.	5.965
40	Yemen, Rep.	5.942
43	Syrian Arab Republic	5.852
55	Djibouti	5.29
75	Tunisia	3.814
76	Algeria	3.692

South Asia

21	Afghanistan	6.607
22	India	6.542
23	Bangladesh	6.468
30	Sri Lanka	6.22
46	Nepal	5.797
65	Pakistan	4.625
71	Bhutan	4.082

Photo credits

Stock imagery to illustrate environmental context is courtesy of Unsplash.

Cover image, photo credit: Deepti Asthana

Page 1, photo credit: Yasmin Velloso

Page 4, photo credit: Nick Garcia

Page 7, photo courtesy of Tokatawin Iron Eyes

Page 9, photo credit: Yasmin Velloso

Page 10, photo credit: Malin Fezehai

Page 11, photo credit: Onibokun Toluwanimi Oluwafemi

Page 15, photo credit: Saumya Khandelwal

Page 16, photo courtesy of Lauren Ritchie

Page 17, photo credit: Jane Hahn

Page 20, photo courtesy of Sarah Jehaan Khan

Page 21, photo credit: Yasmin Velloso

Page 22, photo credit: Malin Fezehai (left)

Page 22, photo credit: Malin Fezehai (right)

Page 25, photo credit: Malin Fezehai

Page 26, photo courtesy of Evelyn Acham

Page 27, photo credit: Anders Hellberg

Page 28, photo credit: Yasmin Velloso

Page 29, photo credit: Amarachi Nwosu (left)

Page 29, photo credit: Saumya Khandelwal (right)

Page 30, photo credit: Tamara Abdul Hadi

Page 31, photo credit: Yasmin Velloso

Page 32, photo credit: Deepti Asthana

Page 36, photo credit: Deepti Asthana

Endnotes

1. IPCC (2020) *Working Group III Mitigation of Climate Change.* https://www.ipcc.ch/working-group/wg3/

2. Jerneck, A. (2017) "Taking gender seriously in climate change adaptation and sustainability science research: views from feminist debates and sub-Saharan small-scale agriculture" in *Sustainability Science.* https://link.springer.com/article/10.1007/s11625-017-0464-y

3. World Meteorological Organization (2020) *WMO Statement on the State of the Global Climate in 2019.* https://library.wmo.int/doc_num.php?explnum_id=10211

4. For example, the IPCC predicted that global warming of 2˚C above pre-industrial levels (1850–1900) would put over half of Africa's population at risk of undernourishment. See https://www.ipcc.ch/sr15/

5. Brookings Institution (2019) *The climate crisis, migration, and refugees.* https://www.brookings.edu/research/the-climate-crisis-migration-and-refugees/

6. IPBES (2019) *The global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.* https://www.ipbes.net/sites/default/files/inline/files/ipbes_global_assessment_report_summary_for_policymakers.pdf

7. El-Sayed, A. and Kamel, M. (2020) "Climatic changes and their role in emergence and re-emergence of diseases" in *Environmental Science and Pollution Research.* https://doi.org/10.1007/s11356-020-08896-w

8. Lenton, T.M., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W. and Schellnhuber, H. J. (2020) "Climate tipping points — too risky to bet against" in *Nature.* https://www.nature.com/articles/d41586-019-03595-0

9. Malala Fund defines a quality education as education that ensures girls have access to school on equal terms with boys and promotes gender-equitable values and behaviours.

10. Imputed 2020 completion rates are baseline. Analysis carried out in collaboration with our data analytics partner, SAS Institute, who provided percentage projections.

11. Muttarak, R. and Lutz, W. (2014) "Is Education a Key to Reducing Vulnerability to Natural Disasters and Hence Unavoidable Climate Change?" in *Ecology and Society.* http://dx.doi.org/10.5751/ES-06476-190142

12. PNAS (2010) *Global demographic trends and future carbon emissions.* https://www.pnas.org/content/107/41/17521

13. The World Bank (2010) *Adaptation to Climate Extremes in Developing Countries: The Role of Education.* http://documents1.worldbank.org/curated/en/328491468340475205/pdf/WPS5342.pdf

14. Andrijevic, M., Cuaresma, J.C., Lissner, T., Adelle, T. and Schleussner C.-F. (2020) "Overcoming gender inequality for climate resilient development" in *Nature.* https://www.nature.com/articles/s41467-020-19856-w

15. Malala Fund carried out analysis in collaboration with our data analytics partner, SAS Institute, who provided percentage projections.

16. See the glossary for definitions of these terms.

17. IPCC (2018) *Special Report: Global Warming of 1.5°C.* https://www.ipcc.ch/sr15/

18. Shepard, D. (2019) "Global warming: severe consequences for Africa" in *Africa Renewal.* https://www.un.org/africarenewal/magazine/december-2018-march-2019/global-warming-severe-consequences-africa

19. Climate Action Tracker (2020) *Paris Agreement turning point: Wave of net zero targets reduces warming estimate to 2.1°C in 2100. All eyes on 2030 targets.* https://climateactiontracker.org/documents/829/CAT_2020-12-01_Briefing_GlobalUpdate_Paris5Years_Dec2020.pdf

20. World Economic Forum (2020) *Climate change is a planetary emergency — how can we avert disaster?.* https://www.weforum.org/agenda/2020/01/climate-tipping-points-risks/

21. UN Environment Programme (2019) *Global Resources Outlook: 2019: Natural Resources for the Future We Want.* https://www.resourcepanel.org/reports/global-resources-outlook

22. United Nations (2019) *SDGs Report: Sustainable Development Goal 12.* unstats.un.org/sdgs/report/2019/goal-12/

23. Our World in Data (2019) *Who has contributed most to global carbon emissions?.* https://ourworldindata.org/contributed-most-global-co2

24. In 2018, the top ten countries in order of level of emissions were: China, United States, India, Russia, Indonesia, Brazil, Japan, Iran, Canada and Germany.

25. Our World in Data (2019) *Who has contributed most to global carbon emissions?.* https://ourworldindata.org/contributed-most-global-co2

26. World Resources Institute (2020) *This Interactive Chart Shows Changes in the World's Top 10 Emitters.* https://www.wri.org/blog/2020/12/interactive-chart-top-emitters. Note: the calculations in this source consider the 27 countries of the European Union as one country and rank the EU as the third highest emitter after China and the U.S.

27. Iron Eyes, Tokatawin (2020) "Tokata Iron Eyes on why the climate movement needs to listen to Indigenous voices" in *Assembly.* https://assembly.malala.org/stories/tokata-iron-eyes-on-why-the-climate-movement-needs-to-listen-to-indigenous-voices

28. Colonising countries in western Europe include Great Britain, the Netherlands, France, Portugal and Spain.

29. Rodney, W. (1972) *How Europe Underdeveloped Africa.* U.K: Bogle-L'Ouverture Publications.

30. Gonzalez, C. G. (2020) "Racial Capitalism, Climate Justice, and Climate Displacement" in the *Oñati Socio-Legal Series.* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3626490

31. McQuade, J. (2019) "Earth Day: Colonialism's role in the overexploitation of natural resources" in *The Conversation.* https://theconversation.com/earth-day-colonialisms-role-in-the-overexploitation-of-natural-resources-113995

32. Kodjo-Grandvaux, S. (2014) "Colonialism, The Hidden Cause Of Our Environmental Crisis" in *World Crunch.* https://worldcrunch.com/culture-society/colonialism-the-hidden-cause-of-our-environmental-crisis

33. UN Women (2014) *The World Survey on the role of women in development 2014.* https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2014/world-survey-on-the-role-of-women-in-development-2014-en.pdf?la=en&vs=3045

34. International Labour Organization (2018) *Care Work and Care Jobs for the Future of Decent Work.* https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_633135.pdf

35. UNEP, UN Women, UNDP and UNDPPA (2020) *Gender, Climate & Security: Sustaining inclusive peace on the frontlines of climate change.* https://wedocs.unep.org/bitstream/handle/20.500.11822/32638/GCS.pdf?sequence=1%26isAllowed=y

36. UNDP (2016) *Policy brief: Gender and Climate Change.* https://www.undp.org/content/dam/undp/library/gender/Gender%20and%20Environment/UNDP%20Linkages%20Gender%20and%20CC%20Policy%20Brief%201-WEB.pdf

37. Jordan, J. C. (2019) "Deconstructing Resilience: Why Gender and Power Matter in Responding to Climate Stress in Bangladesh" in *Climate and Development.* https://www.academia.edu/42143978/Deconstructing_resilience_why_gender_and_power_matter_in_responding_to_climate_stress_in_Bangladesh_Deconstructing_resilience_why_gender_and_power_matter_in_responding_to_climate_stress_in_Bangladesh

38. ALiGN (2020) *Education and Gender norms.* https://www.alignplatform.org/gender-norms-and-education/discriminatory-gender-norms-access-and-educational-attainment#main-body

39. Bangay, C. and Blum, N. (2010) "Education Responses to Climate Change and Quality: Two Parts of the Same Agenda?" in *International Journal of Educational Development.* https://discovery.ucl.ac.uk/id/eprint/10006281/1/Bangay2010Education359.pdf

40. CARE (2016) *Hope dries up? Women and Girls coping with Drought and Climate Change in Mozambique.* http://careclimatechange.org/wp-content/uploads/2016/11/El_Nino_Mozambique_Report_final.pdf

41. UN Office for the Coordination of Humanitarian Affairs (2017) *Horn of Africa: A call for action.* https://reliefweb.int/sites/reliefweb.int/files/resources/HOA_CALL_FOR_ACTION_Leaflet_Feb2017_1.pdf

42. Brookings Institution (2016) *A Framework for Building Resilience to Climate Change through Girls' Education Programming.* https://www.brookings.edu/wp-content/uploads/2016/12/global-20161202-climate-change.pdf

43. Babugura, A. A. (2008) "Vulnerability of Children and Youth in Drought Disasters: A Case Study of Botswana" in *Children, Youth and Environments.* http://www.jstor.org/stable/10.7721/chilyoutenvi.18.1.0126

44. Chai, M. (2019) "Drought drives Pokot girls to miss school" in *The Star.* https://www.the-star.co.ke/sasa/2019-03-12-drought-drives-pokot-girls-to-miss-school/

45. UNICEF (2016) *When Coping Crumbles Drought in India 2015-16: A Rapid Assessment of the Impact of Drought on Children and Women in India.* https://reliefweb.int/sites/reliefweb.int/files/resources/pub_doc117.pdf

46. UNICEF (2011) *Children In Pakistan: One Year After The Floods — Turning Towards a Brighter Future.* https://www.unicef.org/media/files/Pakistan_One_Year_After_the_Floods_-_Final_Report_-_Hi-res.pdf

47. IDMC (2020) *Measuring the costs of internal displacement on IDPs and Hosts: Case studies in Eswatini, Ethiopia, Kenya and Somalia.* https://www.internal-displacement.org/publications/measuring-the-costs-of-internal-displacement-eswatini-ethiopia-kenya-and-somalia

48. Rotich, L.C. and Koros, P. (2015) "Pastoralists and girl child education in Kenya" in *International Journal of Innovative Education Research.* http://seahipaj.org/journals-ci/mar-2015/IJIER/full/IJIER-M-1-2015.pdf

49. ODI (2019) *Child poverty, disasters and climate change: Investigating relationships and implications over the life course of children.* https://www.odi.org/sites/odi.org.uk/files/resource-documents/12618.pdf

50. Malala Fund (2020) *Girls' Education and COVID-19: What past shocks can teach us about mitigating the impact of pandemics.* https://downloads.ctfassets.net/0oan5gk9rgbh/6TMYLYAcUpjhOpXLDgmdIa/3e1c12d8d827985ef2b4e815a3a6da1f/COVID19_GirlsEducation_corrected_071420.pdf

51. UNEP (2020) *Preventing the next pandemic — Zoonotic diseases and how to break the chain of transmission.* https://www.unenvironment.org/resources/report/preventing-future-zoonotic-disease-outbreaks-protecting-environment-animals-and

52. Imputed 2020 completion rates are baseline. SAS Institute provided percentage projections.

53. See the appendix for more details about our methodology.

54. Since our GECI focuses only on low- and lower-middle-income countries as classified by the World Bank, our analysis is limited to this category. Furthermore, the index only considers those countries where there is reliable data on education and gender as reported by UNESCO. While the list above is indicative of where school-aged girls are most vulnerable to disruptions in their education, it does not give a conclusive picture of the situation globally.

55. Abram, N., McGregor, H., Tierney, J. (2016) "Early onset of industrial-era warming across the oceans and continents" in *Nature*. https://doi.org/10.1038/nature19082

56. Busch, J. (2015) "Climate Change and Development in Three Charts" in *Center for Global Development Blog* https://www.cgdev.org/blog/climate-change-and-development-three-charts

57. Ruiz, I. B. (2018) "Climate talks: The power of the world's least powerful countries" in *DW Akademie* https://www.dw.com/en/climate-talks-the-power-of-the-worlds-least-powerful-countries/a-43616168

58. Ritchie, Lauren (2020) "Why environmental activism needs to be intersectional" in Assembly. https://assembly.malala.org/stories/lauren-ritchie-on-creating-an-inclusive-approach-to-climate-action

59. Brookings Institution (2016) *What Works in Girls Education: Evidence for the World's Best Investment.* https://www.brookings.edu/wp-content/uploads/2016/07/What-Works-in-Girls-Educationlowres.pdf

60. Price, R. (2020) *The linkages between population change and climate change in Africa.* https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/15835/K4D%20helpdesk%20900_Population%20change%20and%20climate%20change%20in%20Africa_2.0.pdf?sequence=1

61. Muttarak, R. and W. Lutz. (2014) "Is Education a Key to Reducing Vulnerability to Natural Disasters and Hence Unavoidable Climate Change?" in *Ecology and Society*. http://dx.doi.org/10.5751/ES-06476-190142

62. Brookings Institution, UNICEF and Plan International (2019) *Girls' education in climate strategies: Opportunities for improved policy and enhanced action in Nationally Determined Contributions.* https://www.brookings.edu/research/girls-education-in-climate-strategies/

63. WEDO (2016) *Gender and Climate Change: A Closer Look at Existing Evidence.* https://wedo.org/wp-content/uploads/2016/11/GGCA-RP-FINAL.pdf

64. Braga, A. and Kwauk, C (2017) "3 ways to link girls' education actors to climate actions" in *Brookings Institution Blog*. https://www.brookings.edu/blog/education-plus-development/2017/09/27/3-ways-to-link-girls-education-actors-to-climate-action/

65. Global Labor Organization (2018) *Discussion Paper: Gender and climate change: Do female parliamentarians make difference?* https://www.econstor.eu/handle/10419/179923

66. World Bank (2010) *Adaptation to Climate Extremes in Developing Countries: The Role of Education.* https://openknowledge.worldbank.org/handle/10986/3827?show=full

67. Striessnig, E., W. Lutz and A. G. Patt (2013) "Effects of Educational Attainment on Climate Risk Vulnerability" in *Ecology and Society*. https://www.ecologyandsociety.org/vol18/iss1/art16/

68. Braga, A. and Kwauk, C. (2017) "3 ways to link girls' education actors to climate actions" in *Brookings Institution Blog*. https://www.brookings.edu/blog/education-plus-development/2017/09/27/3-ways-to-link-girls-education-actors-to-climate-action/

69. Royle, Taylor (2020) "Pakistani filmmaker Sarah Jehaan Khan documents stories from the front lines of the climate crisis" in *Assembly*. https://assembly.malala.org/stories/pakistani-filmmaker-sarah-jehaan-khan-documents-stories-from-the-front-lines-of-the-climate-crisis

70. Hawken, P. (ed.) (2017) *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming.* New York: Penguin Books.

71. World Bank (2018) *Missed Opportunities: The High Cost of not Educating Girls.* https://openknowledge.worldbank.org/bitstream/handle/10986/29956/HighCostOfNotEducatingGirls.pdf?sequence=6&isAllowed=y

72. Ibid.

73. World Bank (2015) *Female Education and Childbearing: A Closer Look at the Data.* https://blogs.worldbank.org/health/female-education-and-childbearing-closer-look-data

74. PNAS (2010) *Global demographic trends and future carbon emissions.* https://www.pnas.org/content/107/41/17521

75. World Health Organization (2019) *Contraception: Evidence brief.* https://apps.who.int/iris/bitstream/handle/10665/329884/WHO-RHR-19.18-eng.pdf?ua=1

76. Ibid.

77. Duff-Brown, B. (2017) "Family planning in low-income countries helps girls stay in school" in *The Stanford Institute for Economic Policy Research (SIEPR)*. https://siepr.stanford.edu/news/family-planning-low-income-countries-helps-girls-stay-school

78. Center for Universal Education at Brookings (2021) *A new green learning agenda: Approaches to quality education for climate action.* https://www.brookings.edu/wp-content/uploads/2021/01/Brookings-Green-Learning-FINAL.pdf

79. Kheolamai, T. (2020) "Girls' Next Gen: An innovative learning to instil girls' leadership in disaster and climate resilience" in *Prevention Web*. https://www.preventionweb.net/news/view/74822

80. Green Growth Working Group (GGWG) of the Donor Committee for Enterprise Development (2012) *Women's participation in green growth — A potential fully realised?.* https://www.enterprise-development.org/wp-content/uploads/Womens_participation_in_Green_Growth.pdf

81. Ibid.

82. Austin, K. and Banashek, C. (2018) "Gender Inequality and Environmental Well-Being: A Cross-National Investigation of Ecosystem Vitality and Environmental Health" in *Sustainability in Environment*. https://www.researchgate.net/publication/327042814_Gender_Inequality_and_Environmental_Well-Being_A_Cross-National_Investigation_of_Ecosystem_Vitality_and_Environmental_Health

83. Jordan, J. C. (2018) "Deconstructing resilience: why gender and power matter in responding to climate stress in Bangladesh" in *Climate and Development*. https://www.academia.edu/42143978/Deconstructing_resilience_why_gender_and_power_matter_in_responding_to_climate_stress_in_Bangladesh_Deconstructing_resilience_why_gender_and_power_matter_in_responding_to_climate_stress_in_Bangladesh

84. On mitigation: The Intergovernmental Panel on Climate Change recognises social justice and gender equality as prerequisites to achieving the 1.5°C target. Social justice and gender equality address the uneven distribution of power and infuse values that promote sustainable development, overcoming individual economic interest and going beyond economic growth. See IPCC (2018) "Chapter 5: Sustainable Development, Poverty Eradication and Reducing Inequalities" in *Special Report: Global Warming of 1.5°C*. https://www.ipcc.ch/sr15/

85. Center for Universal Education at Brookings (2021) *A new green learning agenda: Approaches to quality education for climate action.* https://www.brookings.edu/wp-content/uploads/2021/01/Brookings-Green-Learning-FINAL.pdf

86. IPCC (2018) "Chapter 5: Sustainable Development, Poverty Eradication and Reducing Inequalities" in *Special Report: Global Warming of 1.5°C*. https://www.ipcc.ch/sr15/

87. UN (2015) *SDG Compass: SDG 4: Ensure Inclusive and equitable quality education and promote lifelong learning opportunities for all.* https://sdgcompass.org/sdgs/sdg-4/

88. UIS (2019) *New Methodology shows that 258 Million Children, Adolescents and Youth Are Out of School.* http://uis.unesco.org/sites/default/files/documents/new-methodology-shows-258-million-children-adolescents-and-youth-are-out-school.pdf

89. Malala Fund (2020) *Girls' Education and COVID-19: What past shocks can teach us about mitigating the impact of pandemics.* https://downloads.ctfassets.net/0oan5gk9rgbh/6TMYLYAcUpjhQpXLDgmdla/3e1c12d8d827985ef-2b4e815a3a6da1f/COVID19_GirlsEducation_corrected_071420.pdf

90. UNESCO (2018) *Global education monitoring report gender review 2018: Meeting our commitments to gender equality in education.* https://unesdoc.unesco.org/ark:/48223/pf0000261593

91. UNICEF (2019) *Guidance note: Risk-informed Education Programming for Resilience.* https://www.unicef.org/media/65436/file/Risk-informed%20education%20programming%20for%20resilience:%20Guidance%20note.pdf

92. These include renewable energy, manufacturing, transportation, construction, agriculture, forestry, water and waste management and tourism.

93. UNICEF (2020) *Towards an equal future: Reimagining girls' education through STEM.* https://www.unicef.org/media/84046/file/Reimagining-girls-education-through-stem-2020.pdf

94. UNESCO (2017) *Cracking the code: girls' and women's education in science, technology, engineering and mathematics (STEM).* https://unesdoc.unesco.org/ark:/48223/pf0000253479

95. See for example: https://www.un.org/en/observances/women-and-girls-in-science-day/ and https://www.eskills4girls.org/

96. Hickel, J. and Kallis, G. (2020) "Is Green Growth Possible?" in *New Political Economy*. https://doi.org/10.1080/13563467.2019.159896

97. Center for Universal Education at Brookings (2021) *A new green learning agenda: Approaches to quality education for climate action.* https://www.brookings.edu/wp-content/uploads/2021/01/Brookings-Green-Learning-FINAL.pdf

98. Brookings Institution (2016) *How Education Systems Approach Breadth of Skills.* https://www.brookings.edu/wp-content/uploads/2016/05/brookings_how-education-systems-approach-breadth-of-skills_v2-1.pdf

99. Novello, A. and Carlock, G. (2019) *Redefining Green Jobs for a Sustainable Economy.* https://tcf.org/content/report/redefining-green-jobs-sustainable-economy/?agreed=1

100. Center for Universal Education at Brookings (2021) *A new green learning agenda: Approaches to quality education for climate action.* https://www.brookings.edu/wp-content/uploads/2021/01/Brookings-Green-Learning-FINAL.pdf

101. Hawai'i State Commission on the Status of Women (2020) *Building Bridges, not Walking on Backs: A Feminist Economic Recovery Plan for COVID-19.* https://humanservices.hawaii.gov/wp-content/uploads/2020/04/4.13.20-Final-Cover-D2-Feminist-Economic-Recovery-D1.pdf

102. Spicer, A. (2020) "Will Finland introduce a four-day week? Is it the secret of happiness?" in *The Guardian*. www.theguardian.com/money/shortcuts/2020/jan/06/finland-is-planning-a-four-day-week-is-this-the-secret-of-happiness

103. Oxfam (2012) *A Safe and Just Space for Humanity: Can we Live Within the Doughnut?* https://www-cdn.oxfam.org/s3fs-public/file_attachments/dp-a-safe-and-just-space-for-humanity-130212-en_5.pdf

104. Boffey, D. (2020) "Amsterdam to embrace 'doughnut' model to mend post-coronavirus economy" in *The Guardian.* https://www.theguardian.com/world/2020/apr/08/amsterdam-doughnut-model-mend-post-coronavirus-economy

105. Mock COP (2020) *Declaration of Mock Conference of the Parties 26.* https://www.mockcop.org/wp-content/uploads/2020/11/20200112-MOCK-COP-Declaration.pdf

106. UNESCO (2018) *Progress on education for sustainable development and global citizenship education: Findings of the 6th Consultation on the implementation of the 1974 Recommendation concerning Education for International Understanding, Co-operation and Peace and Education relating to Human Rights and Fundamental Freedoms (2012-2016).* https://unesdoc.unesco.org/ark:/48223/pf0000266176

107. UNESCO (2019) *Country progress on Climate Change Education, Training and Public Awareness: An analysis of country submissions under the United Nations Framework Convention on Climate Change.* https://unesdoc.unesco.org/ark:/48223/pf0000372164

108. Cordero, E. C., Centeno, D. and Todd A. M. (2020) "The role of climate change education on individual carbon emissions" in *PLos ONE.* https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0206266

109. Kwauk, C. and Fry, L. (2020) "To raise ambition at the Climate Summit, let's promote quality education — especially for girls" in *Brookings Institution Blog.* https://www.brookings.edu/blog/education-plus-development/2020/12/10/to-raise-ambition-at-the-climate-summit-lets-promote-quality-education-especially-for-girls/

110. Brookings Institution (2020) *Roadblocks to quality education in times of climate change.* https://www.brookings.edu/wp-content/uploads/2020/02/Roadblocks-to-quality-education-in-a-time-of-climate-change-FINAL.pdf

111. Ibid.

112. Reid, R. (2019) "Climate change education and research: possibilities and potentials versus problems and perils?" in *Environmental Education Research.* https://www.tandfonline.com/doi/full/10.1080/13504622.2019.1664075

113. Issa, Marielle (2020) "Evelyn Acham wants Ugandan schools to add climate change to the curriculum" in *Assembly.* https://assembly.malala.org/stories/evelyn-acham-wants-ugandan-schools-to-add-climate-change-to-the-curriculum

114. Oxfam (2019) *Teachers for Change: Supporting teachers for Gender Transformative-Education in South Sudan.* https://reliefweb.int/sites/reliefweb.int/files/resources/Supporting%20Teachers%20for%20Gender%20Transformative%20Education%20in%20South%20Sudan.pdf

115. Wiseman, R. (2019) "Colonialism + Capitalism = climate crisis" in *Global Justice Now Blog.* https://www.globaljustice.org.uk/blog/2019/oct/7/colonialism-capitalism-climate-crisis

116. Center for Universal Education at Brookings (2021) *A new green learning agenda: Approaches to quality education for climate action.* https://www.brookings.edu/wp-content/uploads/2021/01/Brookings-Green-Learning-FINAL.pdf

117. Huckle, J. and Sterling, S. (eds) (1996) *Education for Sustainability.* London: Earthscan.

118. International Alliance of Leading Education Institutes (IALEI) (2009) *Climate Change and Sustainable Development: The response from education.* https://dpu.au.dk/fileadmin/www.dpu.dk/viden/temaeraaa/klimaogmiljoepaedagogik/forskning_miljoe-og-sundhedspaedagogik_klimakonference-2009_20091210145855_dpu_recommendations.pdf

119. Chawla, L. and Cushing, D. F. (2007) "Education for strategic environmental behavior" in *Environmental Education Research.* https://www.tandfonline.com/doi/abs/10.1080/13504620701581539

120. Schwab, W. A. (2018) *Dissertation: Climate Change Education and Civic Outcomes: An Inquiry into Possibilities Considering Educator Expressions of Purposes and Practices in Teaching.* Madison: The University of Wisconsin. https://eric.ed.gov/?id=ED586540

121. UNICEF (2001) *Promoting Children's Participation in Democratic Decision-Making.* https://www.unicef-irc.org/publications/pdf/insight6.pdf

122. Associated Press (2018) "In India, a trio of unlikely heroes wages war on plastic" in *Canada's National Observer.* https://www.nationalobserver.com/2018/06/04/news/india-trio-unlikely-heroes-wages-war-plastic

123. Greenpeace (2018) *Holding your Government Accountable for Climate Change: A People's Guide.* https://www.greenpeace.org/static/planet4-international-stateless/2018/12/4fdd4d8a-peoples_guide_fnl_2.pdf

124. Curnow, J. and Helferty, A. (2019) "A year of resistance: How youth protests shaped the discussion on climate change" in *The Conversation.* https://theconversation.com/a-year-of-resistance-how-youth-protests-shaped-the-discussion-on-climate-change-129036

125. For example: https://foreignpolicy.com/2019/12/30/fridays-for-future-foreign-policy-bureacrats-officials-2019-greta-thunberg/

126. Thunberg, Greta (2020) "Greta Thunberg guest edits Assembly's climate issue" in *Assembly.* https://assembly.malala.org/stories/greta-thunberg-guest-edits-assembly-climate-issue

127. Center for Universal Education at Brookings (2021) *A new green learning agenda: Approaches to quality education for climate action.* https://www.brookings.edu/wp-content/uploads/2021/01/Brookings-Green-Learning-FINAL.pdf

128. Center for Universal Education at Brookings (2021) *A new greener learning agenda: Approaches to quality education for climate action.* https://www.brookings.edu/wp-content/uploads/2021/01/Brookings-Green-Learning-FINAL.pdf

129. McGrath, Matt (2021) "Climate change: Biggest global poll supports 'global emergency'" in *BBC News.* https://www.bbc.co.uk/news/science-environment-55802902

130. van Daalen, K., Jung, L., Dhatt, R. and Phelan, A. L. (2020) *Climate change and gender-based health disparities.* www.thelancet.com/action/showPdf?pii=S2542-5196%2820%2930001-2

131. To date, only nine countries — Benin, Burkina Faso, the Dominican Republic, Ethiopia, Ghana, Indonesia, Malawi, Niger and Uganda — have finalised national climate change strategies. See https://www.uncclearn.org/country-projects/

132. In the first round of NDCs, drafted in 2015, only 42% included a direct reference to children or youth. 68% included education-related terms, but only 26% made these references in relation to children. Only two NDCs made reference to girls' education, and none acknowledged the contributions that investments in girls' education and gender equality could make on the country's ability to achieve its climate goals.

133. Climate Analytics and NewClimate (2020) *Climate Action Tracker.* https://climateactiontracker.org/climate-target-update-tracker/

134. Currently these stand at just 56% for education and 34% for climate. See: http://www.oecd.org/development/gender-development/Aid-Focussed-on-Gender-Equality-and-Women-s-Empowerment-2020.pdf

135. Shankleman, Jess (2020) "Rich Countries Missing the $100 Billion Climate Finance Goal" in *Bloomberg.* https://www.bloomberg.com/news/articles/2020-11-06/rich-countries-are-missing-the-100-billion-climate-finance-goal

136. Chen, C., Noble, I., Hellmann, J., Coffee, J., Murillo, M. and Chawla, N. (2015) *University of Notre Dame Global Adaptation Index: Country Index Technical Report.* https://gain.nd.edu/assets/254377/nd_gain_technical_document_2015.pdf