

# DRAWDOWN'S HEALTH AND EDUCATION SOLUTION

## THE CASCADING BENEFITS OF ACCESS TO UNIVERSAL EDUCATION AND VOLUNTARY FAMILY PLANNING

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Universal access to quality education for girls and boys, alongside access to voluntary family planning services for women, girls, and couples, are essential human rights and cornerstones of gender equality, with cascading benefits for the health and well-being of people and the planet.

Access to education can lead to improved livelihoods, better economic opportunities, delayed onset of marriage, and delayed childbearing.<sup>1,2,3</sup> When coupled with access to quality sexual and reproductive health (SRH) services, this can contribute to significant declines in maternal and child morbidity and mortality rates, unintended pregnancies, and unsafe abortions.<sup>4,5,6,7</sup>

Improved reproductive health and education have a ripple effect on global fertility rates and population changes over time, which in turn can impact the

demand for resources.<sup>8,9,10,11,12</sup> Substantially increasing investment for these human rights at an individual level is an effective way to ensure inclusive, equitable economic development and boost health outcomes across generations, which can also impact future population growth over time. This policy brief highlights the urgent need for these strategies and their far-reaching, cumulative impacts, and details clear recommendations for advancing health and education as a climate solution.

## What is Project Drawdown's Health and Education solution?

Project Drawdown identifies scores of real-world, tangible solutions across a variety of sectors that have an impact on emissions entering the atmosphere.<sup>13,14</sup> The organization's Health and Education solution—which advocates for access to quality universal education for girls and boys, and voluntary family planning for all girls, women, and couples—is one of more than 80 global solutions and accounts for one of the largest projected impacts on emissions at roughly 70 gigatons of carbon dioxide equivalent (CO<sub>2</sub>-eq) avoided by 2050 (See figure 1 below).<sup>13,14</sup> Universal education and voluntary family planning not only lead to dramatic improvements in gender equality and the health of individuals and families—at a population level, globally, they can also contribute to reducing the impacts of climate change on the planet.<sup>9,10,15,16,17</sup>

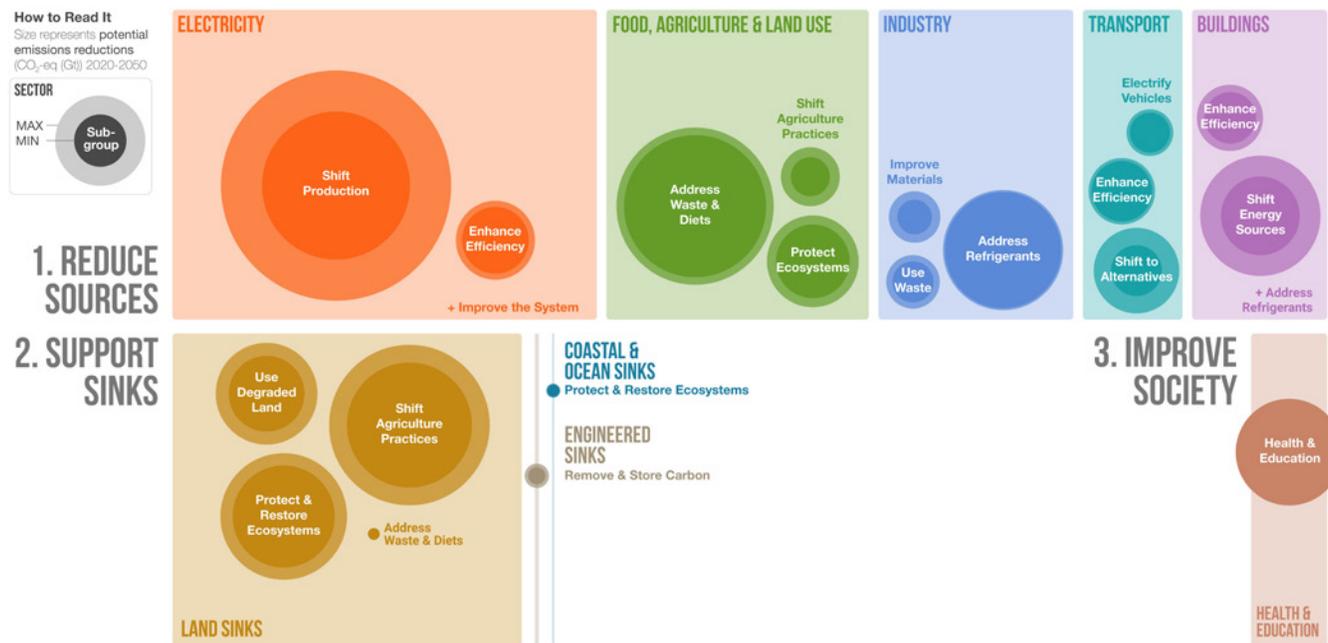


Figure 1 – Project Drawdown's framework for climate solutions

## Voluntary family planning for all women, girls, and couples

In 2020, unmet need for contraception<sup>i</sup> was reported for approximately nine percent of—or one in every 10—women of reproductive age globally.<sup>18</sup> Regional disparities in unmet need exist; in low- and middle-income countries (LMICs), over 20 percent of women express having an unmet need for family planning.<sup>19</sup> Reasons for unmet need vary by region, country, and community. In many contexts, there remain significant challenges such as cost, availability, distance to services, and provider bias.<sup>20,21,22</sup> Persistent barriers exist, especially factors limiting voluntary uptake among vulnerable or marginalized populations, including adolescents, unmarried women, and ethnic minorities.<sup>23,24,25,26</sup> Women—particularly in patriarchal societies—often lack the autonomy to make their own sexual and reproductive choices.<sup>27,28</sup> Ensuring all women have bodily autonomy would overcome a major global impediment to expanding rights-based choices around family planning uptake.<sup>29</sup> Increased knowledge about, access to, and use of voluntary family planning in all countries can lead to better health, development, and economic outcomes around the world.

<sup>i</sup> Unmet need for contraception is defined by WHO as “the percentage of women of reproductive age who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the next child.”

## Inclusive, equitable, and quality education for all children

Despite substantial progress during the past decade in increasing global school enrollment and completion rates, pre-COVID estimates for 2020 indicate that approximately 258 million children and adolescents remain out of school.<sup>30</sup> Disparities in educational attainment across regions and gender are stark. In 2018, 129.2 million girls were out of school, and over 50 percent of all out-of-school children and adolescents were in sub-Saharan Africa (SSA).<sup>30, 31</sup> Upper secondary school completion rates for boys and girls in low-income countries remain alarmingly low, with girls much less likely to finish (See figure 2 below).<sup>32, 33, 34</sup>

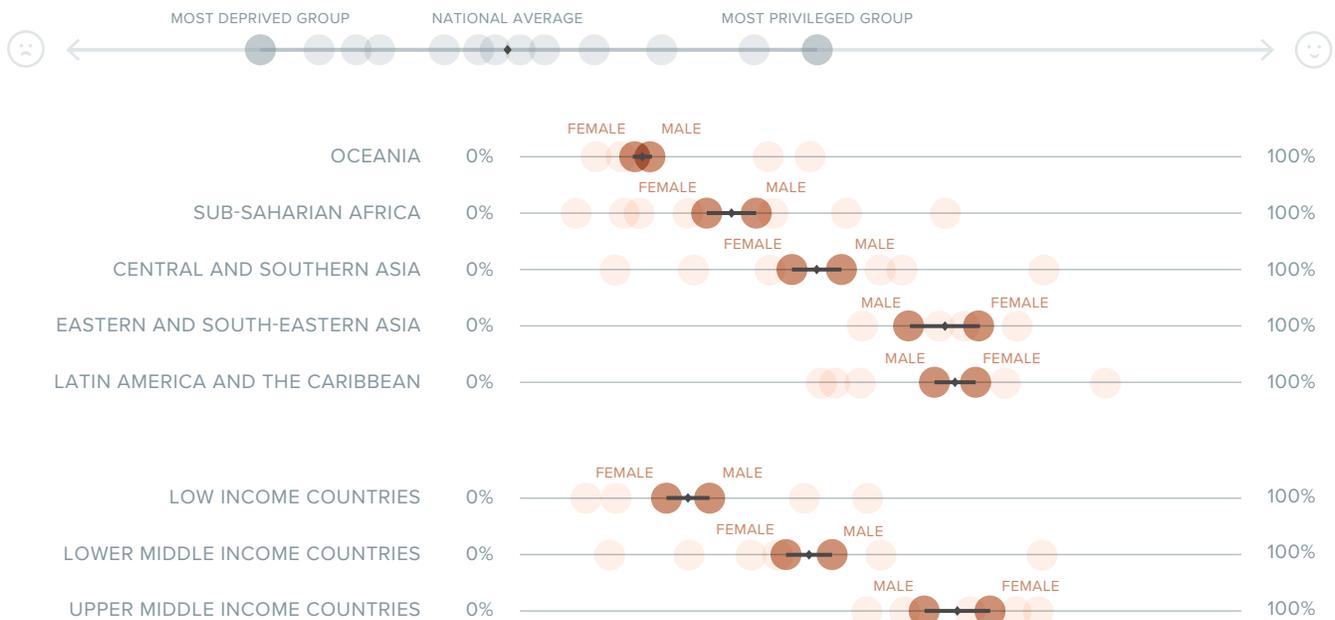
Low educational attainment, particularly for girls, has overarching negative consequences for girls, their families and future children, their communities, and society at large. Girls who drop out of school are more likely to marry and bear children earlier, which in turn can impact their health as well as the health of their children.<sup>35</sup> Girls who are unable to complete their education also often lack decision-making autonomy in the household and are more vulnerable to health risks—including intimate partner violence and unintended pregnancies.<sup>36</sup>

## Why is Project Drawdown's Health and Education solution important?

**Human rights:** Access to quality education and reproductive healthcare are basic human rights. The adoption of a rights-based approach in family planning programs and policies is also fundamental in recognizing the rights of individuals to decide—free from coercion—about their desired family size, as well as the timing and spacing of their children, and to be able to access reproductive health services and information to achieve their desired family goals.<sup>37, 38, 39</sup>

**Gender equality:** Ensuring 12 years of quality education and access to voluntary family planning are essential to achieving gender equality, and can transform deep-seated gendered relations of power, replacing toxic masculinities with an ethic of care, and supporting girls' and women's agency and empowerment.<sup>29, 40, 41, 42</sup>

**The Sustainable Development Goals (SDGs):** Access to education and voluntary family planning are not only SDGs (a collection of global goals designed to achieve a better, more sustainable future for all) in their own right, but also key to achieving progress in all other SDGs, particularly health and sustainable development for women and men, families, and societies.<sup>7, 8, 43</sup> Without these critical achievements in education and health, the



**Figure 2** – Upper secondary school completion rates, measured by the percentage of young people aged three to five years above upper secondary school graduation age (Adapted from World Inequality Database on Education)

impact of other efforts and initiatives to address the five major themes of the SDGs—people, planet, prosperity, peace, and partnership—will be less effective, cost more, and take longer to achieve.<sup>8</sup>



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**Implications for maternal and child health:** Education and access to quality, affordable family planning services can impact rates of maternal morbidity, mortality, and child survival around the world. In countries where less than 10 percent of women use a modern contraceptive method, the average infant mortality rate is 100 deaths per 1,000 live births—compared with 52 deaths per 1,000 live births in countries where more than 30 percent of women can (and do) use modern contraception.<sup>44</sup> Higher levels of parental education, particularly mothers' education, correlate with higher rates of child survival and improved well-being, with no threshold of effect.<sup>6, 45, 46</sup>

**Poverty alleviation:** Children born into poverty are more likely to remain in poverty, lack access to quality schooling, drop out of school to earn money to support their families, or—in the case of some girls—find themselves forced into early marriage.<sup>35</sup> Access to education and voluntary family planning are important strategies for people to earn their way out of the poverty trap, by allowing them to live a healthy life, pursue economic empowerment, and achieve an improved quality of life.<sup>47, 48, 49, 50</sup>

## Estimating the climate impact of the Health and Education solution

The links between universal education and access to family planning at an individual level and changes in population trajectories and the climate at a global scale are complex and interconnected. Staying in school and completing one's education can have sweeping impacts on health behavior, economic opportunities, and decision-making agency. Action-oriented climate education can affect the ways people think about the climate and interact with the planet, potentially leading to lowered collective and lifetime emissions over time.<sup>51, 52, 53, 54</sup>

Family planning enables women and men to better plan the timing and spacing of their children, thereby reducing unintended pregnancies, which can, over time—at the population level—change projected future population growth.<sup>15, 16</sup> While it can be assumed that a reduction in global population will lead to reduced demand and consumption—and thereby reduced GHG emissions over time<sup>9, 10, 55</sup>—it is important to acknowledge that regions of high population growth are among the lowest GHG emitters.<sup>56</sup> And while LMICs are often the focus of initiatives aimed at improving SRH services, many higher income countries (HICs) also face challenges in this area. For example, 45 percent of all pregnancies in the United States (U.S.) are unintended; approximately 40 percent of these pregnancies end in a miscarriage or abortion, while the remaining 60 percent result in a birth.<sup>57</sup> Thus, it is critical that HICs and emerging economies in LMICs adopt the Health and Education solution in addition to other climate solutions (such as low-carbon technologies) in their quest to reduce overall GHG emissions.

Project Drawdown models the impact of the Health and Education solution on global population growth trajectories between 2020 and 2050, using estimates from the United Nations (UN) World Population Prospects. GHG emissions associated with different sectors modeled by Project Drawdown—including transportation, food waste, buildings, electricity, and more—are calculated for two population scenarios: a high-adoption scenario, where there is increased uptake of rights-based voluntary family planning and universal education in alignment with global reproductive health and education advocacy efforts (and the SDGs), leading to fertility declines globally, and a low-adoption scenario, where adoption barriers continue to exist and no

additional investments are made towards improving access to family planning and educational attainment. The model also explores the differential impact of the health and education solution on emissions reduction in HICs compared with LMICs.

Using the latest UN population data from 2019, adopting the Health and Education solution between now and 2050 would contribute to an 8.4 percent decrease in projected future global population levels, from approximately 10.29 billion people to 9.43 billion. This translates to a reduction of almost 70 gigatons of GHG emissions associated with economic development and activity across the system, with 55 percent of the impact in LMICs and 45 percent in HICs.

## Financials: How much will this solution cost?

- **Reproductive health services:** The Guttmacher Institute estimates that meeting all women's SRH health needs would cost \$68.8B US annually (approximately \$10.60 US per person, per year). LMICs, mostly in SSA, require the largest increase in resources—from \$3.40 to \$15.80 US per capita annually—as unmet need in these countries is the highest, and health systems, infrastructure, and personnel supporting these services require the most expansion and improvement.<sup>19</sup>
- **Universal education:** UNESCO estimates that achieving global universal education by 2030 will cost \$340B US per year.<sup>30</sup> More teachers and facilities are needed to accommodate a growth in enrollment, and as a result, LMICs will need to increase average expenditure per primary school student from \$70 to \$197 US by 2030.<sup>58</sup> At present, international and donor financing of approximately \$75B US per year is needed in LMICs; current annual contributions amount to \$16B US, leaving an annual shortfall of \$59B US a year.<sup>59</sup>



Photo by Jeswin Thomas

# LOCAL INITIATIVES FOR A GLOBAL CLIMATE CRISIS

## CAMFED'S CLIMATE SMART AGRICULTURE GUIDES

CAMFED is a pan-African organization combating poverty, inequality, injustice, and the climate crisis through girls' education and women's leadership. CAMFED's flagship program sends female Learner Guides (recent graduates of secondary school) back to their former school to mentor vulnerable girls, deliver life skills, SRH education and psychosocial support to help them overcome their challenges and complete secondary school. Climate Smart Agriculture Guides are CAMFED graduates of the Learner Guide Program who have had the opportunity to continue tertiary studies in sustainable agriculture. With this technical expertise, Climate Smart Agriculture Guides return to their communities to train other (mostly female) smallholder farmers in sustainable farming techniques like drip-irrigation, inter-cropping, and agroforestry.

Through this work, the Climate Smart Agriculture Guides have contributed to the preservation of biodiversity and indigenous knowledge, the effective use of scarce water resources, increased yields, and enhanced the climate resilience and adaptive capacity of their communities. Additionally, the visible impact of the Climate Smart Agriculture Guides has increased these young women's reputations as leaders and experts in their communities. Many now train alongside local government Agricultural Extension Officers, running demonstration farms and illustrating to their communities what educated, empowered young women are capable of, and encouraging more girls and young women to follow in their footsteps.

***Individual and societal gains from universal education are numerous and can impact other climate solutions through their increased adoption.***

## CENTRE FOR GIRLS EDUCATION (CGE)

Only 42 percent of girls in SSA complete secondary school; in Niger, the figure drops to 16 percent. The Centre for Girls Education (CGE) helps girls in the Sahel transition from primary to secondary school. In 2007, researchers from the University of California, Berkeley and Ahmadu Bello University in Nigeria studied alternatives to early marriage and childbearing—risk factors for maternal death. Based on the findings of this study, CGE began offering mentored safe spaces, where a range of skills and knowledge could be acquired with the help of a mentor, and in a place where girls could gather in safety and privacy. The program targets girls in their final year of primary school and first year in secondary school, a critical time for education withdrawal and marriage. With a mentor's guidance, girls improve literacy and numeracy skills, strengthen social safety nets, and acquire a range of life skills, including self-expression, negotiation, critical thinking, and community organizing.

A follow-up of the safe space participants found that their secondary school graduation rates increased twenty-fold and their age at marriage increased by 2.5 years, compared to girls in neighboring communities.<sup>60</sup> Based on the success of the safe space model, CGE and partners have expanded their reach to nearly 60,000 girls, including girls in neighboring Niger. In late 2021, CGE integrated the New Green Learning Agenda into its safe spaces, combining life skills acquisition, family planning, and climate-smart agriculture.

***The quality of education is just as critical as its access and completion, and can have lasting impacts on SRH, livelihoods, and life skills.***

## CALIFORNIA FAMILY PACT

Nearly half of all pregnancies in the U.S. are unintended—meaning women reported wanting the pregnancy later in their lives or not at all. While this figure has decreased in recent decades, the U.S. still has one of the highest adolescent pregnancy rates among HICs, and relatively high rates of infant death and maternal mortality. Improved access to quality contraceptive results in fewer unintended pregnancies and improved maternal and child health. Family Planning Access Care and Treatment (Family PACT) is a public program that offers comprehensive family planning services to qualifying men and women who are uninsured or underinsured, serving 1.1 million Californians of childbearing age through a large network of public and private providers. A 2012 study that evaluated the success of the Family PACT Program through interviewing clients immediately after a clinical visit found that most clients left their sessions using an equally or more effective method of contraception than the type used before their visit.<sup>61</sup> The study also found that without coverage from this program, clients' use of low-efficacy contraception methods increased.

***Accessible, affordable voluntary family planning services that meet the SRH needs of all women, men, and couples can significantly impact the lives of individuals, families, communities, and the planet.***

## Key insights and conclusions

Today, an estimated 7.9 billion people inhabit Earth. By 2050, this number will increase, but how large this increase will be—as well as its consequences in terms of GHG emissions, climate impacts, and planetary health—remains to be seen. Beyond the profound individual and societal benefits of advancing human rights and gender equality, Project Drawdown's Health and Education solution outlined in this brief is an effective rights-based approach to reducing overall GHG emissions over time.

Enabling the right to education and family planning for all people is central to enabling participation in other climate solutions, providing younger generations with the knowledge and skills to engage in solutions like climate-smart agriculture, and reduce demand for carbon-intensive resources.

Health and Education is an effective rights-based approach to reducing overall GHG emissions over time... [and] is central to enabling participation in other climate solutions...



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# RECOMMENDED ACTIONS

## RECOGNIZE THE IMPORTANCE OF UNIVERSAL EDUCATION AND VOLUNTARY FAMILY PLANNING AS A CLIMATE SOLUTION

It is crucial for governments, organizations, and funding bodies to acknowledge that quality education and voluntary family planning are rights-based development priorities that can have significant and cascading benefits on the climate. At present, only six Nationally Determined Contributions (NDCs) reference SRH, and none acknowledge the contributions that an investment in girls' education could make toward climate solutions.<sup>51, 62, 63</sup> National and global climate strategies and conversations need to include education and SRH as important factors in climate change, and LMICs and HICs need to ensure these rights are met for their current populations and future generations.

## ADVOCATE FOR 12 YEARS OF QUALITY EDUCATION FOR GIRLS AND BOYS IN CLIMATE STRATEGIES

Access to an inclusive and complete education for all children is a human right, and has pervasive health, economic, societal, and planetary co-benefits. Education completion rates for girls and boys, especially in LMICs, remain low and fall short of the global SDG #4 targets. Investment towards complete educational attainment must be a priority in climate policies, plans, and funding ventures. Achieving gender equality in education

is equally critical. Quality and comprehensive SRH education continues to be an essential yet under-resourced component of education in many parts of the world.<sup>64, 65</sup> In addition, gender-transformative, action-oriented climate education could have an even greater impact on the planet.<sup>50, 51, 52</sup>

## INCLUDE THE PROVISION OF AFFORDABLE, ACCESSIBLE, QUALITY SRH SERVICES IN CLIMATE STRATEGIES

The plethora of benefits and return on investment derived from quality SRH services is immense. National climate strategies should prioritize efforts to provide affordable, accessible, and voluntary family planning services to all populations, while ensuring that SRH programs and policies are contextual, rights-based, and inclusive. The active involvement of boys and men in SRH education and initiatives is integral to ensure a safe and conducive environment for shared responsibility and decision-making about family planning and child spacing.<sup>66, 67, 68</sup> Adolescent SRH should remain a key focus in discussions around family planning programming and policy.<sup>69, 70</sup> The financial investment necessary to close the global SRH services funding gap is not insurmountable, but will require accountability, commitment, and cooperation from the international community, both in LMICs where unmet need for family planning is high, and in HICs where GHG emissions per capita are high.

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## ABOUT PROJECT DRAWDOWN

### The World's Leading Resource for Climate Solutions

Founded in 2014, Project Drawdown is a nonprofit organization that seeks to help the world reach “drawdown”—the point in the future when levels of greenhouse gases in the atmosphere stop climbing and start to steadily decline, thereby stopping catastrophic climate change—as quickly, safely, and equitably as possible.

Since the 2017 publication of the New York Times bestseller *Drawdown*, the organization has emerged as a leading resource for information and insight about climate solutions. We continue to develop that resource by conducting rigorous review and assessment of climate solutions, creating compelling and human communication across media, and partnering with efforts to accelerate climate solutions globally. Cities, universities, corporations, philanthropies, policymakers, communities, and more turn to Project Drawdown as they look to advance effective climate action. We aim to support the growing constellation of efforts to move climate solutions forward around the world.

Last year, Project Drawdown released *The Drawdown Review*, a report building on the organization's inaugural analysis and best-selling book that takes into account the rapidly evolving landscape of climate solutions available today.

A 501(c)(3) nonprofit organization, Project Drawdown is funded by individual and institutional donations.

## DRAWDOWN SOLUTIONS

The Drawdown Solutions program seeks to determine when and how reaching drawdown is possible, using existing, well-proven, and scalable climate solutions. To uncover that answer, this team reviews and evaluates the potential performance of diverse technologies and practices that reduce greenhouse gas emissions and/or enhance carbon sequestration from the atmosphere. These climate solutions span many sectors; all of them are financially viable, already scaling (at least in some places), and generate many co-benefits for people and the planet.

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