

Invest in Girls and Women to Tackle Climate Change and Conserve the Environment

Facts, Solutions, Case Studies, and Calls to Action

OVERVIEW

Gender equality is critical to the fight against climate change. The first step toward tackling the challenges of climate change is to create a backdrop against which girls and women are empowered to safeguard the environment. Climate change and environmental degradation represent a great threat to poverty reduction, gender equality and to achieving the SDGs. They impact health, food security, nutrition, food production, migration, and people's earnings. Given many girls' and women's roles in agricultural production and as the procurers and consumers of water, cooking fuel, and other household resources, they are not only well suited to find solutions to prevent further degradation and adapt to the changing climate — they have a vested interest in doing so. This policy brief examines some useful strategies to promote the inclusion of women in climate change mitigation, adaptation, and negotiations — and ensure their voices are heard.

SECTION 1: FRAMING THE ISSUE

Climate change is increasing temperatures and affecting weather patterns, resulting in environmental degradation and heightened competition for natural resources and arable land.¹ Impediments to agricultural production caused by environmental hazards such as flooding, droughts, and landslides in turn heighten community vulnerability, decrease food security, force students to drop out of school to handle increasing workloads at home, and increase poverty rates.²

Of the 68.5 million people forcibly displaced around the world, it is estimated that an average of 21.5 million have been displaced annually because of climate related issues since 2008.^{3,4,5} In 2017 alone, disasters, floods, and tropical storms displaced 18.8 million people in 135 countries.⁶

While climate change affects everyone, marginalized groups are particularly impacted because of socio-economic problems, such as poverty and limited access to natural resources. As an example, indigenous people make up 15% of the world's poorest and maintain 80% of the planet's biodiversity on their lands, yet are among the first to face the direct consequences of climate change.^{7,8} However, it is girls and women who bear the greatest burden of climate change and are disproportionately affected compared to men.^{9,10}

Some estimates state that on average, women comprise 43% of the agricultural labor force in developing countries and 50-60% in parts of Asia and sub-Saharan Africa — thus, women are impacted by any strains on agricultural production.^{11,12,13,14,15} During periods of drought and erratic rainfall, women must work harder to secure food, water, and cooking fuel for their families.¹⁶ This puts added pressure on girls within households, who may be forced to drop out of school to help their mothers manage the heavier burden.¹⁷ Globally, girls and women spend up to 200 million hours per day collecting water.¹⁸ They also are the first to be removed from school if firewood must be collected, walking farther distances and carrying extremely heavy loads when deforestation occurs.¹⁹ These tasks undermine productivity and fuel a cycle of poverty that limits the economic and social capital that could be generated to combat climate change.²⁰ Additionally, the vulnerability of girls and women to natural disasters can be further aggravated by other types of discrimination, including poverty, disability, migrant status and race.

Climate disasters have also been shown to increase gender-based violence (GBV), including sexual harassment and violence,²¹ domestic violence,²² sexual exploitation of children,²³ and human trafficking.²⁴ Displacement and migration following a disaster can result in overcrowding and unsafe living conditions in evacuation centers, temporary housing, internal displacement camps, and other shelters.²⁵ Girls and women become more vulnerable to harassment and violence, while increased poverty and loss of community likewise increases the propensity for violence.²⁶ In turn, the heightened risk of violence makes women fearful of venturing out; in Papua New Guinea, this has resulted in women and infants dying in childbirth because women were unable to safely access medical care for fear of being attacked.²⁷

Recognizing the burdens environmental challenges impose on them, women have a key role to play when it comes to climate change mitigation and adaptation. Yet women experience barriers — social, political, and economic — that restrict their ability to take an active seat at the table in climate change negotiations and policy planning, further limiting their opportunities when it comes to mitigating, adapting, and coping with the effects of climate change.^{28,29} Women must be recognized as vital agents of change so that their needs and their contributions will be a part of the solution.

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Empowering women to respond to the challenges posed by climate change is linked to the achievement of several SDGs and targets, including:

SDG 1: End poverty in all its forms everywhere

- **1.5** By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social, and environmental shocks and disasters

SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

- **2.4** By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding, and other disasters, and that progressively improve land and soil quality

SDG 3: Ensure healthy lives and promote well-being for all at all ages

- **3.7** By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information, and education, and the integration of reproductive health into national strategies and programmes



The United Nations has recently prioritized safeguarding the rights of people whose lives are most impacted by climate change, recognizing the direct role the environment plays in shaping the economic and social rights of so many individuals.³⁰ Yet despite the steadily growing body of evidence that shows that climate change is an obstacle to sustainable development and demonstrates a link to an increase in female vulnerability and gender inequality, the United Nations Framework Convention on Climate Change (UNFCCC) largely neglected to outline any gender dimensions in its early years.³¹ That began to change in 2007 with the release of the UNFCCC Bali Action Plan and the establishment of the Global Gender and Climate Alliance (GGCA).³² However, it remains to be seen whether gender issues and the critical role women play in addressing climate change will gain traction in international negotiations.³³ One promising development is that most observers agreed that good progress was made regarding gender at the 2016 Conference of Parties (COP) to UNFCCC in Marrakesh compared to the Lima, Peru, talks in 2014. The COP22 in 2016 saw more negotiating blocs including the developing country blocs, which came out in support of stronger mechanisms to address gender at the international and national levels.³⁴ In 2017, at COP 23 in Bonn, Germany, a significant step was made to include gender equality and women's empowerment in climate change policy discussions and actions through the adoption of a Gender Action Plan. This step assures the incorporation of gender in climate policy work at the international and national level through women's representation and equal participation in all activities and decision-making bodies relating to climate change adaptation, mitigation, and implementation.³⁵

This trend needs to gain traction in the era of the SDGs. Women's leadership and participation is a crucial element to any discussions and decisions on climate change. They must be at the table during all stages and at all levels of decision-making that seeks to find solutions to current and future environmental realities. Yet at the local, regional, national, and international levels, women are still fighting for a leadership role in the climate change dialogue and a place at the negotiation tables.

SECTION 2: SOLUTIONS AND INTERVENTIONS

The evidence-based solutions presented below are underutilized, but they have vast potential to ensure that women are able to claim their roles in all efforts to conserve the environment and tackle climate change:

- Include women within all climate change mitigation and adaptation efforts
- Ensure investment and the implementation of a gender-sensitive approach to disaster preparedness, response, and recovery activities
- Improve and enforce land rights for women
- Promote and fund women-led and women-focused sustainable food production strategies, including fair trade and resource management activities
- Promote a gender-responsive approach to climate financing
- Integrate environmental conservation and climate change adaptation and mitigation with women's health programming
- Invest in and promote technologies that enhance renewable and clean energy sources and support women's participation in their development and use

Include Women within All Climate Change Mitigation and Adaptation Efforts

Ensuring women's leadership, agency, and participation in communal, national, and global climate decision-making processes is essential to both climate change action and to gender-responsive disaster-risk mitigation. Women have a unique understanding of the impact climate change is having on the productive assets upon which they depend. Their roles and perspectives must be acknowledged, valued, and incorporated into the development of sustainable approaches to climate change adaptation and mitigation.

Women often show more concern for the environment by supporting pro-environmental policies and leaders.³⁶ In Nepal,³⁷ Haiti,³⁸ Vietnam,³⁹ and beyond, women-led and women-focused organizations have also demonstrated the knowledge and capacity to drive effective disaster preparedness, response, and recovery efforts in their communities. Increasing their influence in politics and decision-making forums, therefore, could contribute toward achieving environmental goals.⁴⁰ Yet while progress has been made boosting women's representation in political and decision-making bodies over the last five years, the gender gap remains significant — as of 2018, only 23.8% of national parliamentarians⁴¹ were women.⁴² Women are also not equally represented in governance bodies concerning the environment — a survey in 65 countries found that only 35% of environmental sector ministries have a gender focal point, ranging from more than half of ministries of agriculture having a focal point to less than one-fourth of ministries of water having one.⁴³ Additionally, a 2017 report on the United Nations Framework Convention on Climate Change (UNFCCC), showed that women accounted for an average 32% of UNFCCC delegations — a decrease of 6% since 2015.⁴⁴ To adapt to the negative impacts of climate change, women must have a voice and be engaged in leadership and decision-making roles — not only by assuming political office, but by participating in the planning and implementation of sustainable natural resource management practices, climate change mitigation, and adaptation interventions, including at the local and village level.

Disaster Risk Reduction — the practice of systematic analysis and mitigation of the causes of disasters, including reducing exposure to hazards, lessening the vulnerability of people and property, and improving preparedness and early warning for adverse events — is only effective when girls and women are involved and wield decision-making power.^{45,46} And they must share in the fruits of these efforts. Research has



- **3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination

SDG 5: Achieve gender equality and empower all women and girls

- **5.1** End all forms of discrimination against all women and girls everywhere
- **5.2** Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
- **5.3** Eliminate all harmful practices, such as child, early, and forced marriage and female genital mutilation
- **5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life
- **5.6** Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences
- **5.a** Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance, and natural resources, in accordance with national laws



shown that when women are in decision-making and leadership roles, there is a positive impact on sustainable natural resource management and climate change adaptation activities.⁴⁷ As traditional procurers of natural resources and domestic caretakers, girls and women are only not well suited to finding solutions to changing climate but also have a vested interest in doing so. Since adapting to a changing climate is an inescapable reality — even if emissions are halted today — advocacy and decision-making efforts must also include the voices of adolescents and youth, as they have an essential role to play in future efforts related to climate change mitigation and adaptation.⁴⁸

Case Study: The Africa Adaptation Program (AAP)

The Africa Adaptation Program (AAP) addressed women’s roles in climate change in Nigeria by boosting their skills and knowledge with regard to climate change impacts, policy, financing, and negotiations. They focused on developing women’s leadership in key government ministries related to climate change. Many of the countries involved in the AAP program from 2008-2012 worked to revise budgeting processes so that they included funding focused specifically on the gender-specific needs of many women regarding climate change mitigation and adaptation.⁴⁹

Case Study: The Women’s Union in Da Nang City, Vietnam

In advance of Vietnam’s 2013 typhoon, 245 homes in the highest-risk communities engaged a local Women’s Union to develop storm-resistant shelters in advance. The storm displaced thousands of people from their homes, but no evacuations were needed from those that worked with the Women’s Union. Early engagement of this women-led organization in disaster mapping and preparedness was critical to their protection and recovery.⁵⁰

Ensure Investment and the Implementation of a Gender-Sensitive Approach to Disaster Preparedness, Response, and Recovery Activities

Girls and women account for half of all people affected by natural disaster, but face disproportionately greater risk than compared to men.⁵¹ The impact of natural disaster and climate change often exacerbates existing inequalities and gender biases in society, leading to different forms of discrimination and increased vulnerability for girls and women.⁵² Investment in gender-sensitive humanitarian response requires a sustained understanding of the different needs and experiences of girls and women. Far too often, national governments and international agencies fail to apply a gender lens to the needs of affected populations and consequently, under-invest in gender-responsive humanitarian assistance.

As traditional domestic caretakers, girls and women must work harder, walk farther, and risk their safety and wellbeing to procure food, water, and cooking supplies in times of drought or natural disaster. In response to this disproportionate burden, a gender-sensitive approach is one that could address the equitable distribution of labor related to the provision of food and other resources.⁵³ Humanitarian actors should also take into account the risk to security and physical integrity that girls and women face in fragile settings and address issues related to sexual violence, harassment, and mobility. For example, humanitarian actors could consider including women in food distribution teams and setting up separate distribution points for girls and women, where socio-cultural traditions may limit their mobility and access to resources in public spaces.⁵⁴

Case Study: Safe Access to Fuel and Energy (SAFE) Programme - Saving lives through SAFE cooking

The World Food Programme’s (WFP) Safe Access to Fuel and Energy (SAFE) initiative, addresses the risks people face when collecting and using firewood, by providing access to fuel-efficient stoves. The SAFE initiative, recognizes that the delivery of food assistance is linked with several safety, health, and environmental hazards particularly in humanitarian settings, where girls and women are at increased risk of gender-based violence. The SAFE initiative adopts a multi-faceted approach to tackle these challenges, by providing alternative fuel sources, promoting fuel-efficient stoves and providing education to women and vulnerable communities on how to minimize air pollution. In 2014, the SAFE initiative had reached over 2.8 million people across countries such as Ethiopia, Haiti, Kenya, Sri Lanka, Sudan, and Uganda. The initiative aims to reach 10 million people by 2020.⁵⁵

Improve and Enforce Land Rights for Women

Land is an important resource for women. Having rights to land can improve their ability to access capital, derive income, protect household food security, and offer them security in times of hardship. With secure tenure to land, individuals and groups gain greater incentive to invest in soil conservation, plant trees, and avoid deforestation.⁵⁶ Research shows that when women own land, they not only have more secure livelihoods, they also gain status, have greater bargaining power within their households, and in some contexts, are less likely to experience domestic violence.⁵⁷ Yet land tenure systems often favor men through laws and practices that dictate unequal access, use, ownership, and control. Oftentimes, women’s secure land rights are ignored as a key piece of climate change action and development.⁵⁸ Prior to consensus on the Paris Agreement, countries were required to submit Intended Nationally Determined Contributions (INDCs). In a review conducted by the Landesa Center for Women’s Land Rights of INDCs from 18 countries, only three touched on land rights, land reform, or land tenure and none mentioned women’s land rights.⁵⁹ In order to address the challenges imposed by climate change — and to find effective, sustainable solutions — it is critical to secure land tenure rights for women. For example, through the provision of legal land rights, marginalized populations living in poverty are better able to access new funding sources and opportunities, which can promote efforts to curb climate change and facilitate the receipt of compensation when land is taken for conservation purposes or when climate-induced disasters destroy fields and homes.⁶⁰ Enforceable land rights will improve the management of natural resources while boosting the economic status of women.⁶¹



- **5.b** Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women

SDG 6: Ensure availability and sustainable management of water and sanitation for all

- **6.1** By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- **6.2** By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- **6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
- **6.5** By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
- **6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes



Case Study: Women's Land Rights in the Maradi Region of Niger

Women in the south of Niger need access to farmland to generate income and fulfill their household's nutritional needs, especially in deteriorating drought conditions. However, with scarce land resources, extreme poverty, and high population growth in places like the Maradi region, women are prevented from gaining access to farmlands.⁶² Some landless women live in seclusion (in a traditional practice called 'kubli'), only leaving the house with their husband's permission. This seclusion and exclusion from the possibility of possessing land makes women even more vulnerable in a region where agriculture is the main source of income. Addressing the linked problems of food security, nutrition, and climate change, CARE Niger launched the "Women and Land Initiative" in 2010.⁶³ The initiative has been working in the Maradi region to secure land rights for women by raising awareness of the benefits of women's land ownership and by encouraging support from local leaders, including traditional and religious authorities.⁶⁴ Through these awareness- and support-building campaigns, some women's groups have been able to lease community land for a period of 3-10 years, and women's representation in local land committees has nearly doubled. In 2010, only 4% of women inherited land in the region. Two years later, this figure increased to 8%.⁶⁵

Promote and Fund Women-led and Women-focused Sustainable Food Production Strategies, Including Fair Trade and Resource Management Activities

As women are often responsible for collecting fuel and growing and preparing food, it is important that their expertise in resource management be recognized and valued. Much of the natural resource base in rural areas is located on common lands; oftentimes, stemming from weak tenure rights, women can be barred from making decisions concerning the use and management of these resources.⁶⁶ For example, women have less secure rights to land when compared to men and have less time to commit to their plots.⁶⁷ Despite this barrier, as the key providers of food at the household level, women frequently have a greater understanding of the impact climate change is having on the local environment.⁶⁸ They are often the knowledge-keepers of traditional and sustainable methods of natural resource management — when applied, these methods result in more resilient communities and improved livelihoods.⁶⁹ For example, a gender-sensitive study in the Amazon found 45 not previously documented edible species that could be used to improve food security in the region. This particular instance highlights the need to include gender-cognizant strategies when thinking about food security.⁷⁰ Thus, it is critical that any discussion on climate change mitigation, impacts, and adaptation not only includes women, it ensures they have an active decision-making role in the process and implementation.

One way in which women have the potential to support sustainable food production is through participation in fair trade organizations. Research from the Fairtrade Foundation shows that enabling women to join organizations that grow produce could benefit businesses, support global development, and bring gains for women.⁷¹ Fairtrade certification has been shown to increase calorie and micronutrient consumption, increase incomes, and improve gender equity.⁷² As of 2015, women accounted for only 25% of the farmers registered as members of certified fair trade small producer organizations.^{73,74} In order to better equalize this gender divide, businesses should conduct gender analyses of their supply and value chains and develop a gender-equality policy and action plan that they can also share with their producer organizations.⁷⁵ Governments in producer countries can provide women with agronomy training programs and ensure that there are loans and other support for people who do not own land, especially women.⁷⁶ Some organizations have taken it upon themselves to encourage women's participation and support women's voices in decision-making. One example is Kuapa Kokoo, the Ghanaian cocoa cooperative, which has formed district-level gender committees; nearly half its National Executive Council members, including the president, are women.⁷⁷

On average in the developing world, women constitute a sizeable portion of the agricultural labor force⁷⁸ and are thus extremely vulnerable to failing agricultural production.⁷⁹ Further, a drop in production exacerbates vulnerabilities, as women do not have the same access to financial and other resources — such as climate, weather, and market information — as men do to cope with the impacts of climate-induced natural resource depletion.^{80,81,82} The agricultural sector is also one of the leading emitters of greenhouse gases.⁸³ Therefore, it is important for women working in agriculture to be involved with climate change mitigation. Once engaged, these women can incorporate Climate-Smart Agricultural (CSA) practices and sustainable farming into their daily lives, thus increasing food security for themselves and their families.⁸⁴ Some of these practices include water management, terracing, composting, incorporating high-yielding and stress-tolerant varieties of crops, and pasture management.⁸⁵

Indigenous women — who often play vital roles as stewards of nature — are particularly impacted by the effects of climate change.⁸⁶ In most cases, indigenous women are responsible for their families' food security and survive off of the land; as such, they feel the impacts of climate change on a daily basis.⁸⁷ In order to protect biodiversity and reduce degradation of the environment, indigenous women need to be recognized for their leadership role in mitigating the devastating effects of climate change and facilitating climate change adaptation efforts.⁸⁸

Case Study: Climate-Smart Agriculture in Kenya

In 2011, a pilot project in Kenya focusing on female small-scale farmers and dairy farmers incorporated Climate-Smart Agriculture (CSA) as a means of improving yields, income, and wellbeing. Women in the Kamotony region who were concerned about their economic stability were trained in CSA practices and decided collectively to start a tree nursery. This tree nursery provided a new source of income from the sale of seedlings and tree cuttings; the women were able to invest in dairy production with the profits. By applying the CSA techniques, such as feed storage and fodder production, the women were able to increase dairy production. The women now



- **6.a** By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling, and reuse technologies

SDG 11: Make cities and human settlements inclusive, safe, resilient, and sustainable

- **11.6** By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- **11.7** By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

SDG 13: Take urgent action to combat climate change and its impacts

- **13.1** Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
- **13.2** Integrate climate change measures into national policies, strategies and planning
- **13.3** Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning



report that their household food security, nutrition, and income have increased due to CSA practices. They also are able to fund their children's education and healthcare without the economic difficulty that they previously faced.⁸⁹

Case Study: Crop Diversification in Nicaragua

With resources from a community fund, local women in Jinotega, Nicaragua, conducted a risk-mapping exercise to identify new solutions for improving food production. They then received training, seeds, and tools, and collectively decided how the agricultural land could be used differently. After five years, the number of diversified plots in the community quadrupled, and crop production for household use increased over five-fold. Within the same period, each farmer's annual net earnings increased roughly six-fold.⁹⁰

Case Study: Applying Local Knowledge to Crop Production

A UN-funded project in the high plains of Bolivia relied upon traditional community knowledge of weather to improve crop production and avert risks imposed by climate change. The emphasis on applying women's knowledge of the environment – with regard to proper crop and seed storage, for example – was key to the project's success. As a result of this gender-sensitive collaboration, more than 100 context-specific agricultural technologies and practices were either introduced or re-introduced to the community to lessen the potential effects of climate change.⁹¹

Promote a Gender-Responsive Approach to Climate Financing

Integrating gender considerations into climate policies and action plans requires gender-responsive financing at both the national and global levels. This includes the adoption and strengthening of tools and methods related to climate financing through the integration of gender in relevant project cycles and establishing monitoring frameworks to measure outcomes and impact of project activities.⁹² Climate-based projects, for example, should start with a gender analysis in order to evaluate who has access and control over resources, how many women are impacted, and what activities should be prioritized to ensure equitable inclusion of all potential beneficiaries.⁹³

Promoting gender-responsive climate financing also requires the implementation and continued strengthening of gender policies of climate financing mechanisms, such as the Green Climate Fund and the Global Environmental Facility.⁹⁴ Pursuing gender balance in the staffing and leadership of national and global authorizing bodies related to these mechanisms could ensure that women are represented as equal stakeholders in climate funding projects and in the development of their strategic frameworks.⁹⁵

However, for financing mechanisms to address the needs of the most vulnerable, they need to be more inclusive of local- and grassroots-level organizations. Local women's groups have particular difficulty accessing major financial mechanisms because grassroots projects are considered too small for support provision.⁹⁶ A systematic preference for large-scale, technology-intensive projects often excludes small-scale, sustainable solutions that may need funding to replicate and scale. Introducing simplified application and approval procedures for small-scale projects could support the needs and mitigation efforts at the community level and potentially address similar climate issues at the national and regional levels.⁹⁷

Integrate Environmental Conservation and Climate Change Adaptation and Mitigation with Women's Health Programming

Countries with the highest unmet need for contraception also tend to have the fastest-growing populations, the highest projected declines in agricultural production, and the greatest vulnerability to climate change.⁹⁸ Without boosting investments to meet the current demand for sexual and reproductive health services, nations could erase important gains made in environmental and biodiversity conservation, impede adaptation for climate change, and roll back recent improvements in health, education, and gender equality. Improving access to and the availability of voluntary family planning has been shown to be one effective way to remediate the effects of climate change, including addressing food security gaps resulting from decreased crop productivity and slowing emissions.^{99,100} One team of several dozen researchers that set out to "map, measure, and model" the 100 most substantive solutions to climate change, using only peer-reviewed research, named the number one solution a combination of voluntary family planning and girls' education.¹⁰¹

However, despite ample recognition of the importance of voluntary family planning's role in climate change adaptation, family planning does not often receive climate change adaptation funding.^{102,103} Adaptation strategies should reflect multi-sectoral approaches and provide funding to known, effective approaches, especially those that effectively meet the current unmet demand for contraception.^{104,105} Importantly, all of these efforts should be rooted in rights-based approaches to voluntary family planning and sexual and reproductive health and rights.

One promising strategy is the population, health, and environment (PHE) approach, which involves linking efforts to improve environment and climate change adaptation with voluntary family planning and women's health. Projects have shown that the integrated nature of population, health, and environment has increased women's participation in natural resource management and uptake of voluntary family planning.¹⁰⁶ PHE operates under a rights-based approach, asserting the right of all people to have a satisfying and safe sex life, the choice to reproduce, and the freedom to decide if, when, and how often to do so.¹⁰⁷ One example, the *Sustaining Partnerships to Enhance Rural Enterprise and Agribusiness Development* (SPREAD) project in Rwanda, incorporated technical assistance to communities who make their livelihoods from the coffee sector. This approach also included an integrated health component that incorporated health education aimed at reaching farmers. Preliminary reports pointed to the project's impact on greater support and demand for voluntary family planning and its links to family-wide health and economic



Relevant International Agreements:

- Convention on Biological Diversity (1992)
- Programme of Action of the International Conference on Population and Development (1994)
- The Beijing Declaration and Platform for Action (1995)
- The Kyoto Protocol (1997)
- The World Summit on Sustainable Development (2002)
- The Convention to Combat Desertification (2002)
- FCCC Bali Action Plan (2007)
- UN Human Rights and Climate Change Resolution 7/23 (2008)
- The 2005 World Summit
- Commission on the Status of Women (2008)
- The United Nations Framework Convention on Climate Change (2015)
- The Rio Declaration (2015)
- Sustainable Development Goals (2015-2030)



benefits.¹⁰⁸ And a 2015 synthesis of multiple assessments of PHE programming suggests that, given the clear linkages and significant potential, more efforts are needed to rigorously document the impact of dually addressing voluntary family planning services and climate change adaptation.¹⁰⁹

Case Study: Blue Ventures in Madagascar

Blue Ventures has been working in Madagascar to incorporate sexual and reproductive health services with sustainable coastal livelihood and resource management initiatives. This integrated approach addresses the interconnected challenges of poor health, unmet family planning needs, environmental degradation, and food insecurity in a holistic way. It enables communities to manage their resources sustainably, both now and for the future. These approaches enable couples to better provide for their families by decreasing crude birth rates, improving food security, and empowering women to play an impactful role in resource management. Since Blue Ventures began in 2007, it is estimated that more than 2,325 unintended pregnancies have been averted within a population of around 45,000.¹¹⁰

Case Study: The Watershed Management Project in Ethiopia

The Watershed Management Project in eastern Ethiopia ran between 2005 and 2007 and aimed to sustainably improve crop production and limit biodiversity loss in a region of 3,000 rural households.¹¹¹ The project strategy was threefold: train inhabitants and local organizations in sustainable land management practices and ecosystem awareness; rehabilitate uplands and wetlands through reforestation; and promote modern, voluntary family planning methods and HIV/AIDS awareness by inviting health professionals to participate in environmental training.¹¹² After four years, the project showed tangible results, including improved irrigation, compost, and tree-planting methods that have reversed soil degradation trends and improved nutritional levels, thus reducing the need to cut back the forest.¹¹³ By integrating voluntary family planning and HIV/AIDS awareness, the project has helped to ensure that these environmental benefits are sustainable, even in the event of rapid population growth, and are complemented by improved sexual and reproductive health.¹¹⁴

Invest In and Promote Technologies That Enhance Renewable and Clean Energy Sources and Support Women's Participation in their Development and Use

Close to 2.9 billion people in the developing world still use solid fuels to heat and cook, which is directly linked to emissions that cause climate change.¹¹⁵ Such polluting fuels include wood, coal, and charcoal, and the negative health effects of their use are dire.¹¹⁶ Each year, an estimated 2.8 million to 4 million¹¹⁷ people die prematurely from household air pollution.¹¹⁸ The economic, health, and environmental cost of inefficient cooking is a staggering \$123 billion per year.¹¹⁹

Around the world, women are more adversely affected by energy poverty — the cumulative impact of higher health and safety risks stemming from inefficient lighting, household air pollution, and polluting cooking fuels.¹²⁰ Poor access to cooking energy can also put refugee and displaced women at increased risk of gender-based violence and trafficking when women are forced to seek firewood in dangerous areas beyond a protected area.¹²¹ In some conflict-affected areas, travelling to dangerous territories to access firewood also puts women at increased threat of landmines.¹²² Yet if women had the economic and social power to make better energy choices — including the purchase and use of clean energy sources such as cookstoves and high-efficiency fuels — it would help turn the tide of climate change.¹²³ Women entrepreneurs could be supported to invest in sustainable technologies by improving their access to credit and capital through government funding or tax incentives. Additionally, in order to ensure that women are empowered to leverage the benefits of climate-resilient economies, girls' and women's access to new educational and skill development opportunities should be supported and expanded.

Technology justice serves to advance the rights of groups who are in the greatest need of technological innovation to have access to technological advances.¹²⁴ Often, technological research tends to focus on the wealthy and lacks regard for social and environmental costs on other people and the environment; these trends need to be reversed so that all people can access environmentally friendly technologies that enhance wellbeing.¹²⁵

Currently, women make up about 35% of the renewable energy sector work force, although this varies significantly by country and by product.^{126,127} Bringing women into the workforce is a win-win. Female entrepreneurs would then have access to consumers and could promote new solutions, innovative technologies, and clean energy products.¹²⁸ This enables household consumers to choose safe, clean energy. Gender inclusivity within the energy sector is crucial to driving climate change mitigation and inclusive economic gains.¹²⁹

Case Study: Solar Sisters Harnesses the Power of Women to Promote Clean Energy

By creating a woman-centered sales network that brings clean energy technology to rural Africa, Solar Sisters is working to eradicate energy poverty and economically empower women through a direct sales network to sell solar energy products and clean cookstoves. Solar Sisters currently works in Nigeria, Uganda, and Tanzania, and its programming boasts more than 2,000 female entrepreneurs with efforts promoting clean energy reaching 300,000 beneficiaries.¹³⁰

SECTION 3: THE BENEFITS OF INVESTMENT

In order to mitigate the effects of climate change, women's involvement in decision-making is critical. For example, one study found that countries with higher female parliamentary representation are more likely to ratify international environmental treaties,¹³¹ underscoring the reality that women are key changemakers in the fight for a clean, healthy world.

Energy deficiencies and related economic challenges will increase over the next twenty years unless the international community empowers women and includes them in climate change mitigation and adaptation efforts.¹³² The social and environmental determinants of health — clean air, safe drinking water, sufficient food, and secure shelter — are directly affected by climate change.¹³³ The toll climate change takes and can continue to exact on human life alone is staggering. It is anticipated that poor health outcomes related to climate change will claim approximately 250,000 lives every year between 2030 and 2050.¹³⁴ These deaths will stem from malnutrition, malaria, diarrhea, and heat stress.¹³⁵

Yet current research suggests there is a correlation between women's involvement in climate change mitigation and adaption and the reduction of greenhouse gases. For example, the Environment and Gender Index reports that in 2012, the 55 parties that include gender in their 2015 Intended Nationally Determined Contributions (INDCs) accounted for only 18% of greenhouse gases emitted, with 82% of emissions from parties that do not specifically mention gender in their INDCs.¹³⁶ This division highlights the importance of understanding gender-climate linkages and the need for gender-responsive climate action.¹³⁷ A United Nations Food and Agriculture study also found that if women farmers were given the same agricultural inputs, tools, and financial resources as men, their agricultural yields would increase by



20-30%, national agricultural production could rise by up to 4%, and the number of malnourished people could drop by between 12 and 17%.¹³⁸ Evidence suggests that when women have secure rights and land access, they utilize resources sustainably.¹³⁹ Furthermore, small local farmers, including women, should be allowed to retain control over their farming methods and should be included in decision-making regarding agricultural investment.¹⁴⁰

SECTION 4 - CALLS TO ACTION

People who suffer the most from the impacts of climate change should not only have a say in global efforts to mitigate its effects, but also claim a leadership role. Women bear the greatest impact of climate change – as gatherers of shrinking resources, food producers, cooks, and caregivers. This is in addition to the disproportionate burden and increased vulnerability that women face due to forced migration caused by climate change. But their connection to the land makes them not only more vulnerable, but also more valuable in terms of finding solutions to climate change.

In order to power progress for all, many different constituents must work together – governments, civil society, academia, media, affected populations, the United Nations, and the private sector – to take the following actions for girls and women:

- Ensure female involvement, including indigenous women and grassroots groups, in climate change negotiations and resource management. (Most relevant for: governments, civil society, academia, media, affected populations, the United Nations, and the private sector)
- Strengthen opportunities for women's participation in climate change mitigation and adaptation processes. (Most relevant for: civil society, governments, the United Nations, and the private sector)
- Develop policies to address climate change that recognize gender-sensitive impacts, provide women with access to resources, and give them opportunities to participate in mitigation and adaptation processes. (Most relevant for: governments, civil society, the United Nations, and the private sector)
- Ensure key decision-makers understand how environmental degradation and climate change affect women differently than men. (Most relevant for: governments, civil society, academia, media, affected populations, the United Nations, and the private sector)
- Promote gender-responsive approaches to climate financing. (Most relevant for: governments, civil society, the United Nations, and the private sector)
- Invest in technologies and initiatives to enhance sustainable and renewable energy sources that reflect women's knowledge, needs, and roles, while incorporating indigenous expertise and traditional practices. (Most relevant for: governments and the private sector)
- Integrate environmental conservation strategies within family planning and women's health programming and vice versa. (Most relevant for: civil society, governments, and NGOs)
- Prioritize the accessibility of clean energy and distribution of fuel-efficient cookstoves for refugee and displaced girls and women, including in camp settings. (Most relevant for: governments, United Nations, and NGOs)
- Invest in research and program evaluations to better understand the links between cookstove and/or clean energy interventions and prevention of gender-based violence, particularly in humanitarian settings. (Most relevant for: United Nations, academic institutions, and NGOs)
- Include women in the creation of policies and strategies around environmental protection including disaster response; building resilience; securing land and inheritance rights, food, and resources; and ending energy poverty. (Most relevant for: governments, civil society, the United Nations, and the private sector)

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Disclaimer: The views and opinions expressed in this technical paper are those of the authors and do not necessarily reflect the official policy or position of all partnering organizations.

These briefs are intended to be used by policymakers, decision-makers, advocates, and activists to advance issues effecting girls and women in global development. These materials are designed to be open-sourced and available for your use.

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