Accelerate Access to Resources — Land, Clean Energy, Water, and Sanitation

Facts, Solutions, Case Studies, and Calls to Action

OVERVIEW

When girls and women endure restricted access to resources such as land, energy, and water and sanitation, there are far-reaching implications. These can affect their health, education, housing, and livelihoods, as well as the safety and sustainability of the environments in which they live. This brief explores seven solutions highlighting gender-responsive approaches that create an enabling environment for effective and secure access to resources. These solutions include increasing access to clean energy both outside and inside the home, securing land and inheritance rights for women, employing a comprehensive approach for Water, Sanitation, and Hygiene (WASH), including women in all decisions related to resource management, and improving water services and Community-Led Total Sanitation (CLTS).

SECTION 1: FRAMING THE ISSUE

The Sustainable Development Goals (SDGs) offer a framework for accelerating women's access to land, water, sanitation, energy, and other resources, which has the potential to alleviate poverty across the globe (see Box 1). Girls and women, in particular, will benefit from greater access to these resources through improved wealth, health, education, safety, dignity, and financial security; they will also gain productive time and opportunities to claim leadership roles in the public sphere and engage in decision-making. Several international agreements recognize the important link between access to resources and advancing economic prosperity.

The Universal Declaration of Human Rights establishes the principle of non-discrimination on the basis of sex and guarantees women equality in accessing their rights to land and natural resources, yet inheritance and land laws, policies, and practices generally favor men. In nearly all countries with available data, men are more likely than women to be agricultural land holders; in 27 countries, women make up less than 10% of all agricultural land holders and hold a smaller proportion of total agricultural land. And this is only based on the data that is available — there is no systematically-collected global data on women's land rights, so much of the issue remains unknown.

Rigid gender roles in many societies place women at the center of the family. They are responsible for securing household resources — food, water, and fuel for heating and cooking — and serve as the primary caregivers. However, they often lack the social and political power and financial means to control access to these resources. Given the time they devote to meeting household needs and overcoming barriers to accessing resources, their opportunities for education, generating income, rest, and community engagement are impeded — opportunities that would enhance their wealth and wellbeing and that of their family.

Increasingly, environmental stress impacts access to resources, which disproportionately affects women. By 2030, experts predict a global water shortfall of 40%, which will further burden women who are tasked with securing water resources for the family. Furthermore, as water, firewood, and land grow scarce and women remain excluded from decisions about those resources, they are pushed further out of women's reach.

Lack of access to and decision-making over the use of natural resources often taxes women's physical and mental health and reduces their ability to seek privacy and practice healthy behaviors. As resources become scarcer and competition for them increases, especially in humanitarian crises and disasters, gender-based violence becomes even more of a risk. Additionally, as they are forced to go longer distances for these scarce resources, girls and women face an increased risk of sexual violence or animal attacks. 10.11 The following global statistics highlight the challenges facing all people living in poverty, especially women:

- On average, less than 20% of agricultural land is held by women.¹²
- 1 in 7 people practice open defecation either because latrines are not available at home or because latrines are considered unsafe or dirty.¹³
- Girls and women collectively spend 97 billion hours annually securing a safe place to defecate.¹⁴
- 1 in 3 women experience gender-based violence.¹⁵ Collecting fuel, fetching water, bathing in open water, and open defecation all can expose girls and women to sexual harassment and violence.¹⁶
- Women and children spend up to 5 hours per day gathering fuel for household needs due to a lack of

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.



Accelerating access to resources, water, and sanitation, for girls and women is linked to the achievement of multiple SDGs and targets, including:

SDG 1: End poverty in all its forms everywhere

- 1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable
- 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
- 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

• 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women..., including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities

























access to clean cooking fuels and stoves. 17 In 8 out of 10 households that do not have a water source on the premises, women and girls are responsible for water collection. 18

- Girls and women spend up to 200 million hours per day collecting water.¹⁹
- 1-2 hour waiting times at water kiosks are common in dense urban areas, with standpipe-to-person ratios of 1:500.²⁰ About half of schools have inadequate access to water and sanitation in low- and middle-income countries,²¹ which increases the likelihood of absenteeism among adolescent girls.^{22,23}

SECTION 2: SOLUTIONS AND INTERVENTIONS

Restricted access to resources has cross-cutting implications, impacting the health, safety, education, land tenure, housing, cultural practices, self-determination, and human rights of individuals and communities. Within this multi-sectoral landscape, a one-size-fits-all approach will not suffice. This brief explores seven solutions that encompass gender-sensitive approaches that can be scaled up to make a real impact for women:

- Engage women in efforts to advance universal access to affordable, safe, and sustainable sources of clean energy, including clean cookstoves and other productive technologies, throughout homes and communities
- Improve and enforce secure land and productive resource rights for women, including their right to access, control, own, and inherit
- Include women in decision-making related to land and resource management, humanitarian response planning, and refugee camp management
- Employ the comprehensive approaches for water, sanitation, and hygiene (WASH) framework
- Improve water services
- Promote Community-Led Total Sanitation (CLTS)
- Implement comprehensive WASH services in schools, including provisions for menstrual health and hygiene management (MHM)

Engage Women in Efforts to Advance Universal Access to Affordable, Safe, and Sustainable Sources of Clean Energy, Including Clean Cookstoves and Other Productive Technologies, Throughout Homes and Communities

Every home needs a safe, reliable, environmentally sustainable, and clean source of energy for cooking, lighting, heating, and productive uses. Access to clean, affordable, and safer household lighting can save money, improve health, reduce the risk of fires, and contribute to livelihoods, as women are able to invest the time they save collecting fuel in more productive pursuits. ²⁴ Access to clean and safe household lighting also allows women to reduce spending on lighting alternatives like kerosene, candles, and battery torches — channeling more financial resources to their household and children's needs. ²⁵

Though robust empirical data are not available to quantify the gains of rural electrification, experience suggests that when a household or community has access to electricity and cleaner and more efficient cookstoves and fuels, the economy and people's quality of life improve. For example, a lack of electricity is a challenge to improving the literacy of the 781 million people in the world who cannot read 26 — two-thirds of whom are women. Data from the World Bank shows that youth literacy rates tend to be lower in developing countries with electrification rates below 80%. 27,28

The use of polluting fuels also poses a major burden on sustainable development. Globally, three billion people — 50% of households in LMICs and 95% of African households — rely on biomass fuels to cook (wood, animal dung, and crop waste), causing serious environmental and health impacts that disproportionately affect women and children.²⁹ The problem is exacerbated in rural areas, where more than 80% of households use biomass fuels, compared to 20% of urban homes.³⁰ According to the World Health Organization (WHO), household air pollution from cooking kills more than 4 million people every year and sickens millions more. Increasing women's access to safe, affordable, clean cookstoves and fuels is one solution that can dramatically reduce fuel consumption and exposure to harmful cookstove smoke, as well as reduce risks associated with fuel collection or acquisition.³¹

To accelerate the path to universal access to household energy, it is essential to integrate women's needs and opinions into every aspect of the value chain — from research, design, and production to marketing, sales, and distribution.³² Experience shows that without women's opinions and input, products do not meet their needs and will not be used consistently. Support should be provided to women-led enterprises that sell clean fuel, cookstoves, and clean technologies, and employ women as marketing agents, distributors, and after-sales service providers. As household energy managers, women are in a unique position to connect with their peers, increase awareness, and deliver energy products and services.³³

Case Study: The Barefoot Approach — Women Barefoot Solar Engineers of Africa

The Women Barefoot Solar Engineers of Africa work to improve the lives of the rural poor living in remote villages off the energy grids. ³⁴ These women, many of them grandmothers and most of them illiterate, work in the 21 least-developed countries in Africa, helping to supply their communities with clean, low-cost household lighting from solar energy. ³⁵ Since 2005, more than 140 women from Africa have trained at the Barefoot College. ³⁶ Within six months, these women learned how to fabricate, install, and maintain solar-powered household lighting



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

• 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

SDG 6: Ensure access to 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

SDG 7: Ensure access to affordable, reliable, sustainable, and modern energy for all

• **7.1** By 2030, ensure universal access to affordable, reliable, and modern energy services

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

 11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums



























systems and were capable of transforming the lives of more than 2,000 families in solar-electrified villages in Africa.³⁷

Case Study: Providing Poor Families with Alternatives to Biomass Fuel in India

In 2016, the Indian Government launched the Pradhan Mantri Ujjwala Yojana (PMUY), a program aiming to protect women and children from the harmful effects of indoor air pollution by providing Liquefied Petroleum Gas (LPG) connections to families living below poverty line. So far they have distributed a total of 50 million LPG connections, reducing India's dependency on biomass fuels, saving trees, and improving health conditions. As of August 2017, PMUY has provided 27.7 million Indian families with LPG connections. 38.39

Improve and Enforce Secure Land and Productive Resource Rights for Women, Including Their Rights to Access, Control, Own, and Inherit

Promoting women's land rights is an effective, long-term solution to advancing opportunities for women and enhancing community health and wellbeing. ⁴⁰ When a woman has secure rights to land, her status and role in household decision-making improves and she is better equipped to care for herself and her family and break out of poverty. ⁴¹ This can lead to better nutrition and food security, increased education for children, better health outcomes, decreased vulnerability to HIV, and in some situations, less exposure to domestic violence. ^{42,43}

In 2016, the Land Policy Initiative (LPI) launched a campaign demanding that 30% of land in Africa be individually or jointly owned by women by 2025. 44 Though African women hold a significant role in the agricultural sector and food production, a system of customs and laws prevents them from having access to and control of the land they work. 45 The campaign aims to achieve this goal through research into existing laws and regulations, advocacy for women's land ownership, and improving efficiency of land administration. 46

Case-study: The Greatest Predictor of Poverty in India is Landlessness

An estimated 18 million families in rural India are landless and tens of millions more have insecure rights to the land they rely on. Their long-term insecurity and inability to protect and secure the land they depend on is a major predictor of poverty, seeds conflict, and hinders economic growth.⁴⁷ Since 2000, Landesa has been working to change this reality. By partnering with state and central government leaders, Landesa strives to create opportunity, incentive, and security through strengthening land rights. Landesa supports the creation of policies that strengthen girls' and women's land rights, raise legal awareness, and grant homestead and farmlands to rural women.⁴⁸ By working with Indian state government officials and central government leaders, Landesa has reached more than one million families.⁴⁹ Increasingly, leaders in India's poorest states are recognizing that insecure land tenure is a significant hurdle to development and stability. Already, the governments of Bihar, West Bengal, Odisha, Karnataka, Andhra Pradesh, Telangana, and Uttar Pradesh have launched programs to bolster women's and girls' land rights.⁵⁰ In West Bengal, Landesa's Girls Project educates girls about their land rights and provides agricultural training and an opportunity to sell their crops for school fees; more than 48,000 girls currently participate.⁵¹

Include Women in Decision-Making Related to Land and Resource Management, Humanitarian Response Planning, and Refugee Camp Management

To implement effective and sustainable resource management programs, women must be engaged in the decision-making process, as they are most affected by land and resource inequities. Gender plays a defining role in how individuals utilize and benefit from land and natural resources, which are closely linked to livelihoods for the vast majority of people. 52 Failing to recognize the unique challenges and opportunities women face — especially in conflict settings, which includes the risk of physical insecurity linked to their role in collecting natural resources or growing food for the family — has the potential to further perpetuate inequalities regarding land and natural resource rights, access, and control. 53

When dealing with displaced populations in humanitarian crises or disasters, it is essential to include women and adolescent girls in the planning, decision-making, and operations of camps. As traditional domestic caretakers, girls and women work harder, walk farther, and risk their safety and wellbeing to procure food, water, and cooking fuel for their families. Girls and women are also uniquely susceptible to an increased risk of gender-based violence in these fragile settings and therefore, their needs must be addressed throughout the camp administration, coordination, and management processes. Including women in the decision-making process will allow gender-responsive humanitarian planning and management that takes into account 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. Camps that include women in decision-making bodies are likely to be well-designed, reducing the risk of gender-based violence, improving quality of life, and protecting the dignity of vulnerable populations. Girch and protecting the dignity of vulnerable populations.

Case Study: Bringing Women to the Table in Sudan

Following the establishment of the Republic of South Sudan in 2011, SOS Sahel, an international NGO working in partnership with local groups, implemented a resource-based conflict reduction program providing women and youth with natural resource management and conflict resolution skills. ⁵⁷ Women pastoralists in the region have a reputation for being extremely influential as peacebuilders, but they had been excluded from decision-making processes. ⁵⁸ SOS Sahel engages women and marginalized groups, encouraging



Relevant International Agreements:

- UN Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1979)
- United Nations Conference on Environment and Development (Earth Summit) (1992)
- Millennium Development Goals (2000-2015)
- International Decade for Action "Water for Life" (2005-2015)
- Sanitation and Water for All Partnership (2010)
- Sustainable Energy for All (2011)
- Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests (2012)
- Sustainable Development Goals (2015-2030)

























traditional leaders to incorporate them into formal decision-making processes. ⁵⁹ Through educational tools and sessions provided to women in the communities, steering groups with women representatives were developed and community structures were registered as legal bodies in accordance with Sudanese regulations. ⁶⁰

Employ the Comprehensive Approaches for Water, Sanitation, and Hygiene (WASH) Framework

Sustainable solutions for girls and women require comprehensive approaches — approaches that facilitate access to water, sanitation, and hygiene (WASH) services. Decades of WASH programming experience dictates that the first steps to success involve conducting an explicit analysis of the needs on the ground and identifying a hypothesis of change before any action is taken. Many major development organizations working in WASH have general consensus on categories of factors that should be considered as part of analyzing local strengths and weaknesses, to design an appropriate intervention that encompasses the broader needs of the community. Such comprehensive frameworks are vital to ensuring sustainable gains over the long term.

These comprehensive frameworks consider three domains around which interventions are developed and implemented:64

- Access to supplies and services, such as water supply, sanitation systems, latrines, handwashing stations, soap, water treatment supplies and equipment, fecal sludge management services, and menstrual hygiene products;
- An enabling environment that incorporates supportive policies, strengthened institutional capacity, private sector involvement, organizational support from government and civil society, adequate financing, partnerships, and cross-sectoral collaboration; and
- 3 Establish hygiene-promotion activities for social and behavior change through interpersonal communication, mass media, community theatre, community mobilization, sanitation marketing, social norm change, and habit formation.

All three domains are interrelated and together promote healthy and sustainable changes in behavior. Consider menstrual hygiene management, as an example. It requires access to products and services, including pads, adequate supplies of water for washing, and a private place to change and bathe. ⁶⁵ And improved sanitation behaviors call for access to sanitation facilities, but they may also require microfinance loans for households to purchase latrines over time and fecal sludge management services to sustainably maintain the facilities. ^{66,67}

The second pillar, an enabling environment, requires governments to enact policies that focus on providing sanitation and water services for communities and ensure that WASH services are included in the education budget.^{68,69} Best practice around community water and sanitation services includes strengthening community governance and calling for fair representation and meaningful participation of women in the planning, designing, and monitoring of services.⁷⁰ Going back to the menstrual hygiene management example, an enabling environment might include eliminating taxes on feminine hygiene products.⁷¹ It could also include school policies that allow girls to use the sanitation facility as needed and budgets for soap and menstrual supplies. Finally, having ready access to WASH products and services and a supportive, enabling environment does not ensure individuals and communities will consistently and correctly perform improved WASH practices. It is critical to change behavior by creating demand.

Case Study: Multi-Sector Approach to Reducing Malnutrition

In Bangladesh, the Strengthening Household Ability to Respond to Development Opportunities program adopted a multi-sectoral approach to improving the nutritional status of mothers and children in four remote, rural areas. 72 The framework focused on enhancing the literacy and leadership skills of girls and women, educating them about sound health and nutrition practices, and installing wells for access to safe drinking water; these interventions led to better health within the communities and a reduction in malnutrition. 73 And by incorporating the importance of proper WASH practices, the percentage of mothers who wash their hands before food preparation rose from 60% to 94%; households with access to safe, clean water rose from 57% to 71%; and the percentage of people with access to a sanitary latrine rose from 13% to 54%. 74

Improve Water Services

When women spend less time fetching water, they gain more productive time that can be dedicated to focusing on their children, growing food, or pursuing education or economic opportunities. 75 And when women do not need to trek long distances to fetch water, they also avoid associated risks, such as gender-based violence and animal attacks. 76 Beyond that, there are multiple health benefits linked to reducing the time they spend fetching water. A 15-minute decrease in time spent walking to a water source is associated with a 41% average reduction in diarrhea prevalence, an 11% reduction in under-five mortality, and improvements in the nutritional status of children — a likely result of more water being available in the household. 77

Comprehensive national water strategies should be developed and include the construction, operation, maintenance, and rehabilitation of water points. The optimal number of beneficiaries and optimal distance from households within the service area must be explicit; past recommendations define reasonable access as within the dwelling, yard, or plot. Water strategies should also clearly address safe access in informal settlements and peri-urban and rural areas, where safe drinking water may be less common, and develop an acceptable definition at the country level for time invested in fetching water outside the dwelling. They must discourage any sort of stigma or discrimination regarding menstruation or minority groups and avoid other disempowering social norms or community practices. The role of women in irrigating or fetching and treating water should be systematically tracked to monitor changes and improvements and to better understand how improved water services change a woman's status in the household and in society.

Empowering women is an important part of service delivery. Women must be involved in planning water service provision and be represented and meaningfully participate in governing bodies. Furthermore, women should be supported to become involved in WASH service delivery, granting them income generating opportunities. Evidence suggests that communities with water and sanitation user groups that include women function more effectively and sustainably.⁸²

Promote Community-Led Total Sanitation (CLTS)

Community-Led Total Sanitation (CLTS) is a facilitated participatory process to inspire rural communities to abandon the accepted practice of open defecation, without reliance on external subsidies to build toilets. When facilitated effectively, CLTS ignites a sense of shared disgust and shame within the community as members realize they are literally ingesting one another's feces as long as open defecation continues.⁸³ This often leads to the spontaneous decision by most households to build or improve latrines and engages

























social norms to spur community action to shame violators and sustain improvements in latrine use and sanitation practice. The do-it-yourself approach to latrine construction fosters local innovation, often resulting in communities eradicating open defecation within 3-6 months.⁸⁴

Bringing sanitation options closer to the home is a critical improvement for women in the community; without it, they may have to walk long distances to find a site that is private, which puts them at risk of gender-based violence.⁸⁵ Having sanitation available within the home can ease multiple burdens on women. It saves them time and energy, ensures their dignity, reduces their exposure to violence, and improves their nutritional status, which in turn has a positive impact on their reproductive health and pregnancy outcomes.^{86,87}

Over time, implementers have expanded and innovated the concept of CLTS to incorporate a range of actions for improving health outcomes, including the promotion of handwashing with soap and supporting sanitation marketing to engage private sector contributions.⁸⁸ CLTS also opens the door to conversations about topics once considered taboo. Women can discuss health risks related to unsafe menstrual hygiene management (MHM). And once they understand the issues and potential pitfalls, men and boys want to assist their wives and sisters. By starting these conversations in the home, it becomes easier for women to participate in community discussions and in decisions that will impact their health, instill dignity, and help to change social and cultural norms.⁸⁹

Case Study: WASHplus Program in Mali

In 2012, WASHplus integrated a WASH/nutrition program in the Mopti region of Mali to reach women of reproductive age and their children in 180 villages in three districts with high rates of stunting. ⁹⁰ In addition to motivating villages to collectively abandon open defecation and increasing demand for low-cost sanitation, the program places a strong emphasis on improving nutrition and hygiene practices, including handwashing, water treatment, exclusive breastfeeding, and dietary diversity through a range of behavior change approaches. ⁹¹ Trained community health workers visit communities to educate women on WASH and also screen for undernourished children who are referred to the community health/nutrition centers for treatment. ⁹² As of 2015, WASHplus has trained more than 400 community extension workers, and 10,000 latrines have been constructed or upgraded in the targeted communities.

Implement Comprehensive WASH Services in Schools, Including Provisions for Menstrual Health and Hygiene Management (MHM)

Keeping girls in school produces better-educated women who tend to plan their families, have healthier and better-educated children, and are paid higher wages. A systematic review of research found that girls' attendance in formal school is positively associated with delayed sexual initiation, marriage, and childbirth, lower rates of HIV/AIDS, and improved gender equality. One critical pathway to increasing girls' school attendance is investing in WASH in schools, stated as a the lack of such facilities in schools is cited as a global obstacle to quality education. Introducing WASH facilities and programs in schools would attract pupils and reduce absenteeism. Therefore, parents prefer to put children in schools with proper sanitation facilities.

A comprehensive school WASH program includes access to water, sanitation, and hygiene facilities, hygiene education, and menstrual health and hygiene management (MHM). 99.100.101 Facilities should be gender-segregated, with roughly 25 girls per toilet and 50 boys per toilet, and have a functioning water point that is safe for drinking and handwashing. 102 The absence of gender-segregated toilets is especially challenging for menstruating adolescents, who can miss up to a week of school a month. 103 Many eventually drop out. 104 Ensuring that menstrual hygiene management programs are effective requires more than building girl-friendly facilities. Schools should also integrate puberty education for girls and boys, educating teachers, families, and communities about menstrual hygiene to break taboos and cultural constraints. 105 Girls should also have a say in the types of facilities and menstrual products that would best serve their needs at school, leading to a more "girl-friendly" school that is a source of empowerment and pride. 106 The positive impact in schools may spill over to communities. A school WASH program in Zambia, for example, led to households installing latrines and handwashing facilities, children teaching parents better hygiene, and former taboo topics such as open defecation and menstruation being discussed openly. 107,108

In humanitarian settings particularly, WASH standards must take into consideration the increased protection risks women and girls face in those contexts — specifically, gender-based violence (GBV) — and must work collaboratively to prevent and mitigate these risks. 109

Case Study: SPLASH in Zambia

SPLASH (Schools Promoting Learning Achievement through Sanitation and Hygiene), a USAID/Zambia-funded WASHplus activity, brought clean drinking water, sanitation, and hygiene education to primary schools in Eastern Province. ^{110,111} By providing a cleaner and safer learning environment, SPLASH aspired to improve the health, learning, and performance of pupils and teachers. ¹¹² Activities centered on providing safe water and adequate sanitation and adopting better hygiene practices. ¹¹³ As part of the menstrual hygiene management component, girls' latrines were equipped with washrooms and schools were encouraged to stock sanitary pads and other hygiene consumables, such as soap and toilet paper. ¹¹⁴ The SPLASH program saw an anecdotal increase in enrollment and a 26% reduction in student absenteeism. ^{115,116}

SECTION 3: THE BENEFITS OF INVESTMENT

The results of a global cost-benefit analysis of water supply and sanitation depict the costs and benefits of investing in all water and sanitation improvements. 117 In developing regions, the return on a \$1 investment ranged from \$2 to \$5.50, depending on the intervention. 118,119 The main contributor to these economic benefits was the time saved through better access to water and sanitation services, which accounted for more than 70% of the overall economic benefits. 120 Globally, for every \$1 invested in water and sanitation, there is a \$4.30 return in the form of reduced healthcare costs. 121,122

Though comparable data for household energy has not yet been calculated, an analysis by the World Health Organization (WHO) suggests an average of \$60 billion in annual economic benefits could be accrued if half the people cooking with solid fuels switched to liquefied petroleum gas. ¹²³ Societal benefits would take the form of improvements in health and social status, as well as reductions in drudgery, time spent collecting fuel, and risk of attack or assault while collecting fuel. ¹²⁴ These gains would bring about additional economic benefits that are necessary for inclusive and sustainable development. ¹²⁵

There is a strong empirical evidence that women's leadership and inclusion in decision-making processes contributes to better emergency preparedness, effective humanitarian response, and inclusive and sustainable peace building. ¹²⁶ A study commissioned by ActionAid shows that women's understanding and knowledge of their local environment and community uniquely positions them to be

























transformational agents in emergency response preparedness and resilience building.¹²⁷ Additionally, a UN Women study measuring the effect of gender equality programming on humanitarian outcomes determined that including women in humanitarian programming is associated with improved access to water, sanitation and hygiene (WASH) and improved food security, particularly for women and children.^{128,129}

Investing in efforts to improve women's access to and use of land also leads to positive impacts on local economies. ¹³⁰ When women have secure land rights, their earning can increase significantly, impacting their ability to open bank accounts, save money, build credit, and make investments. ¹³¹ Furthermore, when women are empowered, their children are empowered too — a ripple effect that contributes to breaking cycles of poverty. ¹³² Women face a serious gender gap in accessing productive resources such as land, credit, water, energy, and technologies. ¹³³ Closing this gap could lead to increasing agricultural yields on women's farms by 20-30%, lifting 100 to 150 million people out of hunger. ¹³⁴ Similarly, when women are able to take leadership roles in energy planning and management, not only are they able to access additional forms of employment and skills building, they are able to influence the implementation of social policies and reinforce their existence. ¹³⁵

If done effectively, investing in safe access to water, sanitation, and household energy can better engage half the population and spur economic productivity. A gender lens approach can augment the positive impact of access to resources that benefits everyone — women, local communities, and low- and middle-income countries.

Case Study: Finance Clean Water and Sanitation through WaterCredit Loans

Many low-income households in developing countries have limited access to credit. WaterCredit builds communities' capacity to construct clean toilets and water supply connections by helping local financial institutions provide loans. To date, WaterCredit has disbursed 2.9 million loans totaling \$983 million, 90% of which went to women, and the majority of which went to rural borrowers earning \$2 or less per day. All 12 million people have benefited across 12 countries. Suidence has shown that as access to water and sanitation credit becomes available, low-income clients choose to take out loans and 99% of borrowers are able to pay them back. Suidence has shown that as access to water and sanitation credit becomes available, low-income clients choose to take out loans and 99% of borrowers are able to pay them back.

SECTION 4: CALLS TO ACTION

There is ample evidence to verify that the cross-cutting strategies outlined above have the potential to open access to resources and open opportunities for the women who struggle to acquire them. When adapted to address the specific contexts of each community, these approaches not only empower women, they also improve the health and wealth of societies as a whole.

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

- Engage women in efforts to advance universal access to affordable, safe, and sustainable sources of clean energy, including clean cookstoves, throughout homes and communities. (Most relevant for: governments, civil society, academia, affected populations, the United Nations, and the private sector)
- Establish clear legal and regulatory frameworks and gender-disaggregated, data-gathering measures to guarantee women's secure rights to land, including the right to inherit, own, access, control, and participate in land governance. (Most relevant for: governments, civil society, and the United Nations)
- Improve safe access to water, sanitation, and hygiene (WASH), and work with communities and schools (rural and urban) to become open, defecation free, and "girl-friendly." (Most relevant for: governments, civil society, the United Nations, and the private sector)
- Ensure schools have adequate WASH facilities and supplies and provide education on menstrual health and hygiene management. (Most relevant for: governments, civil society, and the private sector)
- Focus efforts toward more integrated, gender-centered design to strengthen access to natural resources, land, water, sanitation, and affordable, clean energy. (Most relevant for: governments, civil society, the United Nations, and the private sector)
- 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: the United Nations, academic institutions, and NGOs)
- Support women's development of, access to, ownership of, benefit from, and inheritance of assets, such as land, productive resources, capital, and technology. (Most relevant for: civil society, governments, and the private sector)
- Undertake gender-responsive and women-led resource and land management initiatives, and provide strong legal and socially-legitimate land tenure rights for women. (Most relevant for: civil society, governments, and the private sector)

Last Reviewed and Updated: August 2018

Prepared by: Renuka Bery and Julia Rosenbaum, FHI 360

Reviewed by: Genine Babakian, Consultant; Juliana Bennington, Women Deliver; Mary Crippen, Women Deliver; Arianna DeLorenzi, Women Deliver; Masha DeVoe, Women Deliver; Tatiana DiLanzo, Women Deliver; Louise Dunn, Women Deliver; Monica de Pinto Ribeiro Hancke, Women Deliver; Katja Iversen, Women Deliver; Vanessa Lopes Janik, World Bank Group; Jessica Malter, Women Deliver; Tzili Mor, Landesa Center for Women's Land Rights; Susan Papp, Women Deliver; Rosemary Pop, World Bank Water Global Practice; Savannah Russo, Women Deliver; Athena Rayburn, Women Deliver; Liuba Grechen Shirley, Consultant; Petra ten Hoope-Bender, Women Deliver; Saeeda Rizvi, Women Deliver; Katia Araujo, Landesa

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.

Learn more about the Deliver for Good campaign.

























ENDNOTES

- 1 Giovarelli, Renee, and B. Wamalwa. Land Tenure, Property Rights, and Gender - Challenges and Approaches for Strengthening Women's Land Tenure and Property Rights. USAID, 2011. Web. http://www.researchgate.net/ publication/303691736_Land_Tenure_Property_Rights_and_Gender_-_ Challenges_and_approaches_for_strengthening_women's_land_tenure_and_ property_rights>.
- 2 Women at Work: Trends 2016. International Labour Office, 2016. Web. http://wcms_457317.pdf>.
- 3 "Land & Gender Recounted." Land Portal | Securing Land Rights Through Open Data, http://landportal.org/book/thematic/land-and-gender>.
- 4 "Women's Economic Empowerment." Issues paper. 2011. Web. 1 Apr. 2016. https://www.oecd.org/dac/gender-development/47561694.pdf.
- 5 Ibid
- 6 "Why Women Are Key." Women's Earth & Climate Action Network, International. 2016. Web. http://wecaninternational.org/why-women-are-key.
- 7 "UN Report: World Faces 40% Water Shortfall by 2030." 22 Mar. 2015. Web. 8 Mar. 2016. http://www.voanews.com/content/un-report-world-faces-40-percent-water-shortfall-by-2030/2690205.html.
- 8 Fonjong, Lotsmart N. and Martha Abongwa Ngekwi. "Challenges of Water Crisis on Women's Socio-Economic Activities in the Buea Municipality, Cameroon." Journal of Geography and Geology 6.4 (2014). Web. http:// ccsenet.org/journal/index.php/jgg/article/view/39557/23146>.
- 9 Gerrard, Megan. "Influx of Refugees and Limited Firewood Leads to Spike in Gender-Based Violence." Women's Refugee Commission, 6 Jan. 2016, https://www.womensrefugeecommission.org/blog/2371-influx-of-refugees-and-limited-firewood-leads-to-spike-in-gender-based-violence.
- 10 House, Sarah, et al. "Violence, Gender, & WASH: Making water, sanitation and hygiene safer through improved programming and services." A Practicioner's Toolkit. London: WaterAid/SHARE, 2014. Web. 12 Apr. 2016. http://www.bc.uk/vgw/Briefing-notes-toolsets-checklists/VGW-TS1-Case-studies-GBV-and-WASH.pdf.
- 11 Protection & Gender. "Safe Access to Fuel and Energy (SAFE) Protection & Gender." Safe Access to Fuel and Energy, http://www.safefuelandenergy.org/issues/protection-gender.cfm>.
- 12 "Why Land Rights Matter." Washington: USAID, 2015. Web. https://www.usaid.gov/sites/default/files/documents/1865/USAID_Infographic_Why_Land_Rights_Matter_Print_rev.pdf>.
- 13 "Water and Sanitation: The Pathway to a Sustainable Future." Infographic. New York: UN Water, 2015. Web. http://www.hopespring.org.uk/water-and-sanitation-the-pathway-to-a-sustainable-future-infographic/.
- 14 "We Can't Wait: A Report on Sanitation and Hygiene for Women and Girls." 2013. Web. http://www.wateraid.org/what-we-do/our-approach/research-and-publications/view-publication?id=a5ab0a96-1574-4225-a16a-75d5e5ec4232.
- 15 "Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence." Geneva: World Health Organization, 2013. Web. 8 Apr. 2016. http://apps.who.int/iris/bitstream/10665/85239/1/9789241564625_eng.ndf?ua=1.
- 16 House, Sarah, et al. "Violence, Gender, & WASH: Making water, sanitation and hygiene safer through improved programming and services." A Practicioner's Toolkit. London: WaterAid/SHARE, 2014. Web. 12 Apr. 2016. http://www.bc-wash.lboro.ac.uk/vgw/Briefing-notes-toolsets-checklists/VGW-TS1-Case-studies-GBV-and-WASH.pdf.
- 17 "Mutual Benefits of Empowering Women for Sustainable and Inclusive Development." Vienna: United Nations Industrial Development Organization, n.d. Web. 12 Apr. 2016. https://www.unido.org/fileadmin/user_media_upgrade/What_we_do/Topics/Energy_access/03._UNIDO_Energy_Gender_Brochure.pdf>.
- 18 Safely Managed Drinking Water Thematic Report on Drinking Water 2017. World Health Organization, 2017, http://data.unicef.org/wp-content/uploads/2017/03/safely-managed-drinking-water-JMP-2017-1.pdf.
- 19 "Water & Sanitation." The Water Burden: Girls and Women Lack Safe Water. UNICEF USA, Web. https://www.unicefusa.org/mission/survival/water/water-burden-girls-and-women-lack-safe-water-.
- 20 Ray, Isha. "Women, Water, and Development." Annual Review of Environment and Resources 32 (2007): 421-449.
- 21 "Water, Sanitation and Hygiene." Annual Report 2011. New York: UNICEF, 2012. Web. http://www.unicef.org/wash/files/UNICEF_WASH_2011_ Annual_Report_Final.pdf>.
- 22 Ibid
- 23 UNESCO. "Accountability in education: meeting our commitments, Global Education Monitoring Report 2017/2018". UNESCO, 2017. Web. http://unesdoc.unesco.org/images/0025/002593/259338e.pdf#page=246.
- 24 Poor People's Energy Outlook 2014. Practical Action, 2014, http://policy.practicalaction.org/policy-themes/energy/poor-peoples-energy-outlook/poor-peoples-energy-outlook-2014.

- 25 Ibid.
- 26 "The World's Women 2015: Trends and Statistics." United Nations Statistics Division. 2015. Web. http://unstats.un.org/unsd/gender/chapter3/chapter3.html.
- 27 The Power of Literacy: Women's Journeys in India, Indonesia, Philippines and Papua New Guinea. Asia South Pacific Association for Basic and Adult Education (ASPBAE), 2012. Web. http://www.campaignforeducation.org/docs/reports/members/The%20Power%20of%20Literacy.pdf.
- 28 Electricity and Education: The Benefits, Barriers, and Recommendations for Achieving the Electrification of Primary and Secondary Schools. UNDESA, 2014, http://sustainabledevelopment.un.org/content/documents/1608Electricity and Education.pdf>.
- 29 Burning Opportunity: Clean Household Energy for Health, Sustainable Development, and Wellbeing of Women and Children. World Health Organization, 2016, http://apps.who.int/iris/bitstream/ handle/10665/204717/9789241565233_eng.pdf?sequence=1>.
- 30 Burning Opportunity: Clean Household Energy for Health, Sustainable Development, and Wellbeing of Women and Children. World Health Organization, 2016, http://apps.who.int/iris/bitstream/handle/10665/204717/9789241565233 eng.pdf?sequence=1>.
- 31 Household air pollution and health, WHO Fact sheet N°292, Updated May 2018. http://www.who.int/mediacentre/factsheets/fs292/en/.
- 32 Boiling Point Issue 66: Women, Energy and Economic Empowerment. **ENERGIA** GVEP, GIZ, Practical Action, and Deloitte, 2015, http://www.energia.org/boiling-point-women-energy-and-economic-empowerment/.
- 33 "WE Programme." n.d. Web. 8 Mar. 2016. http://energia.org/what-we-do/womens-economic-empowerment/.
- 34 Roy, Bunker. "Women Barefoot Engineers: A Community Solution." New York: United Nations Commission on the Status of Women, 2011. Web. 12 Apr. 2016. http://www.un.org/womenwatch/daw/csw/csw55/panels/Panel1-Roy-Bunker.pdf>.
- 35 Ibid.
- 36 Ibid.
- 37 Ibid.
- 38 Gender, the Environment and Sustainable Development in Asia and the Pacific. United Nations, Economic and Social Commission for Asia and the Pacific, 2017, http://www.unescap.org/sites/default/files/publications/SDD-Gender-Environment-report.pdf.
- 39 "ABOUT PMUY." Pradhan Mantri Ujjwala Yojana, Government of India: Ministry of Petroleum & Natural Gas, http://www.pmujjwalayojana.com/about.html>.
- 40 Peterman, Amber. "Women's Property Rights and Gendered Policies: Implications for Women's Long-term Welfare in Rural Tanzania." The Journal of Development Studies 47.1 (2011): 1-30. Web. 8 Mar. 2016. http://www. tandfonline.com/doi/abs/10.1080/00220381003600366>.
- 41 Ibid
- 42 Allendorf, Keera. "Do Women's Land Rights Promote Empowerment and Child Health in Nepal?" World Dev. 35.11 (2007): 1975–1988. Web. 15 Apr. 2016. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3657746/>.
- 43 Knox, Anna, et al. Mending the Gap Between Law and Practice: Organizational Approaches for Women's Property Rights. International Center for Research on Women, 2016, http://www.icrw.org/wp-content/uploads/2016/10/Mending-the-Gap-Between-Law-and-Practice-Organizational-Approaches-for-Womens-Property-Rights.pdf>.
- 44 "Put land in the hands of women for economic transformation A call for policy makers." UNECA. 10 Jul. 2016. Web. http://www.uneca.org/stories/put-land-hands-women-economic-transformation-%E2%80%93-call-policy-makers.
- 45 Ibid.
- 46 Ibid.
- 47 "Landesa in India." Landesa. 2015. Web. http://www.landesa.org/what-we-do/india/>.
- 48 Ibid.
- 49 Ibid.
- 50 Ibid.
- 51 "What We Do: West Bengal." *Landesa*, http://www.landesa.org/what-we-do/india/west-bengal/>.
- 52 "Women and Natural Resources: Unlocking the Peacebuilding Potential."
 New York: United Nations Environment Programme, United Nations
 Entity for Gender Equality and the Empowerment of Women, United
 Nations Peacebuilding Support Office and United Nations Development
 Programme, 2013. Web. http://www.undp.org/content/dam/undp/
 library/crisis%20prevention/WomenNaturalResourcesPBreport2013.pdf>.
- 53 Ibid
- 54 Ferris, Elizabeth, Daniel Petz and Chareen Stark. "Disaster Risk Management: A Gender-Sensitive Approach is a Smart Approach Chapter



























- 4 of The Year of Recurring Disasters: A Review of Natural Disasters in 2012." Brookings, 2013. Web. https://www.brookings.edu/wp-content/uploads/2016/06/ND-Review-Chapter-4.pdf.
- 55 "ON THE FRONTLINE: CATALYSING WOMEN'S LEADERSHIP IN HUMANITARIAN ACTION." Action Aid, 2016. Web. https://www.actionaid.org/sites/files/actionaid/on_the_frontline_catalysing_womens_leadership in humanitarian action.pdf>.
- 56 Ward, Jeanne, and Julie Lafrenière. Thematic Area Guide for: Guidelines for Integrating Gender-Based Violence Interventions in Humanitarian Action: Reducing Risk, Promoting Resilience and Aiding Recovery. Inter-Agency Standing Committee, 2015, https://gbvguidelines.org/wp/wp-content/uploads/2015/09/TAG-CCCM-08_26_2015.pdf>.
- 57 "Women and Natural Resources: Unlocking the Peacebuilding Potential."
 New York: United Nations Environment Programme, United Nations
 Entity for Gender Equality and the Empowerment of Women, United
 Nations Peacebuilding Support Office and United Nations Development
 Programme, 2013. Web. http://www.undp.org/content/dam/undp/
 library/crisis%20prevention/WomenNaturalResourcesPBreport2013.pdf>.
- 58 Ibid.
- 59 Ibid.
- 60 Ibid.
- 61 Dreibelbis, R, et al. "The Integrated Behavioural Model for Water, Sanitation, and Hygiene: a systematic review of behavioural models and a framework for designing and evaluating behaviour change interventions in infrastructure-restricted settings." BMC Public Health 13 (2013). Web. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4231350/.
- 62 Ibic
- 63 Rosenbaum et al, Julia: "Behavior-Centered Approaches to Improve Health Outcomes." WASHplus, 2015. Web. http://www.washplus.org/sites/default/files/BC%20brief%20final%20508.pdf.
- 64 Storti, Charlotte. Joint Publication 8: The Hygiene Improvement Framework: A Comprehensive Approach for Preventing Childhood Diarrhea. EHP, UNICEF/ WES, USAID, World Bank/WSP, and WSSCC, 2004, https://www.ehproject.org/PDF/Joint_Publications/JP008-HIF.pdf.
- 65 Sommer, Marni, et al. "WASH in Schools Empowers Girls' Education: Proceedings of the Menstrual Hygiene Management in Schools Virtual Conference 2013." UNICEF. 2013. Web. http://www.unicef.org/wash/schools/files/MHM_Booklet_Final_HR(3).pdf.
- 66 "Financing Sanitation for Cities and Towns." Learning Paper. Sydney: Institute for Sustainable Futures, University of Technology Sydney, 2014. Web. 15 Apr. 2016. http://www.colorado.edu/washsymposium/sites/default/files/attached-files/SNV%20Financing%20Sanitation%20Learning%20Paper.pdf.
- 67 Koné, Doulaye and Sylvie Peter. Faecal Sludge Management (FSM). Sandec Training Tool 1.0 Module 5. Dübendorf: Sandec: Department of Water and Sanitation in Developing Countries, 2008. Web. 15 Apr. 2016. http://www.sswm.info/sites/default/files/reference_attachments/EAWAG%20SANDEC%202008%20Module%205%20FSM%20Lecture.pdf>.
- 68 "Public finance for water supply and sanitation: focus on national budgets." Briefing note. Addis Ababa: WaterAid in Ethiopia, n.d. Web. 15 Apr. 2016.
- 69 Sommer, Marni, et al. "WASH in Schools Empowers Girls' Education: Proceedings of the Menstrual Hygiene Management in Schools Virtual Conference 2014." New York: UNICEF, 2015. Web. 16 Apr. 2016. http:// www.unicef.org/wash/schools/files/MHM_vConf_2014.pdf>.
- 70 "Minimum standard commitments to gender and diversity in emergency planning." Pilot Version. Geneva: International Federation of Red Cross and Red Crescent Societies, 2015. Web. 15 Apr. 2016. http://www.ifrc.org/Global/Photos/Secretariat/201505/Gender%20Diversity%20MSCs%20Emergency%20Programming%20HR3.pdf.
- 71 Sommer, Marni. "Where the education system and women's bodies collide: The social and health impact of girls' experiences of menstruation and schooling in Tanzania." JOURNAL OF ADOLESCENCE 33.4 (2010): 521-529. Web. https://www.researchgate.net/publication/223035224 Where the education_system_and_women's bodies collide_The_social_and_health_impact_of_girls' experiences_of_menstruation_and_schooling_in_Tanzania>
- 72 "Multi-Sector Approach to Reducing Malnutrition Combining 'Short' and 'Long' Routes." Bangladesh 2006–2010: LARGE-SCALE PROGRAMS AIMED AT REDUCING MALNUTRIION THROUGH A CROSS-SECTOR APPROACH INCLUDING WASH. Washington: USAID, 2015. Web. http://www.washplus.org/sites/default/files/bangladesh-multisector2015.pdf.
- 73 Ibid.
- 74 Ibid.
- 75 Wilbur, Jane, et al. Water for Women: Every Woman Counts. Every Second Counts. Unilever, Sunlight, WaterAid, Oxfam, and NextDrop, 2015, http://www.issuelab.org/resources/23040/23040.pdf>.

- 77 Pickering, AJ and J Davis. "Freshwater availability and water fetching affect child health in Sub-Saharan Africa." Environ. Sci. Technol. 46.4 (2012): 2391– 2397. Web. https://pubs.acs.org/doi/abs/10.1021/es203177v.
- 78 Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines. World Health Organization and UNICEF, 2017, http://apps.who.int/iris/bitstream/handle/10665/258617/9789241512893-eng.pdf;isessionid=44B787165CE773E9035E0D8E858DC9B5?sequence=1
- 79 Ihid
- 80 Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development. UN Women, 2018, http://www.unwomen.org/en/digital-library/publications/2018/2/gender-equality-in-the-2030-agenda-for-sustainable-development-2018.
- 81 House, Sarah, et al. "Violence, Gender, & WASH: Making water, sanitation and hygiene safer through improved programming and services." A Practicioner's Toolkit. London: WaterAid/SHARE, 2014. Web. 12 Apr. 2016. http://www.best-gammales-wash.pdf.
- 82 "Water for a Sustainable World." The United Nations World Water Development Report 2015. Paris: UNESCO, 2015. Web. http://unesdoc.unesco.org/images/0023/002318/231823E.pdf.
- 83 Pickering, AJ, et al. "Effect of a community-led sanitation intervention on child diarrhoea and child growth in rural Mali: a cluster-randomised controlled trial." The Lancet Global Health 3.11 (2015): e701–e711. Web. .
- 84 Rijsberman, Frank and Alix Peterson Zwane. "Sanitation and Water Challenge Paper." Challenge Paper. Copenhagen: Copenhagen Consensus 2012, 2012. Web. 8 Mar. 2016. https://www.copenhagenconsensus.com/sites/default/files/Water+and+Sanitation.pdf>.
- 85 "Water for a Sustainable World." The United Nations World Water Development Report 2015. Paris: UNESCO, 2015. Web. http://unesdoc.unesco.org/images/0023/002318/231823E.pdf.
- 86 Pickering, AJ, et al. "Effect of a community-led sanitation intervention on child diarrhoea and child growth in rural Mali: a cluster-randomised controlled trial." The Lancet Global Health 3.11 (2015): e701–e711. Web. .
- 87 Padhi, BK, et al. "Risk of Adverse Pregnancy Outcomes among Women Practicing Poor Sanitation in Rural India: A Population-Based Prospective Cohort Study." PLoS Med 12.7 (2015). Web. http://journals.plos.org/ plosmedicine/article?id=10.1371/journal.pmed.1001851>.
- 88 House, Sarah, Thérèse Mahon, and Sue Cavill. Menstrual Hygiene Matters: A resource for improving menstrual hygiene around the world. 2012. Web. http://www.wateraid.org/what-we-do/our-approach/research-and-publications/view-publication?id=02309d73-8e41-4d04-b2ef-6641f6616a4f.
- 89 Ibid.
- 90 Bery, Renuka, Sahada Traore, and Lonna Shafritz. "WASHplus in Mali: integrating WASH and nutrition for healthy communities." Field Exchange 51 (2016): 134. Web. 15 Apr. 2016. http://www.ennonline.net/fex/51/washplusmali.
- 91 Ibid.
- 92 Ibid.
- 93 "Girls' Education." 16 Dec. 2015. Web. http://www.worldbank.org/en/topic/education/brief/girls-education.
- 94 Lloyd, Cynthia B. "Priorities for Adolescent Girls' Education." Policy/ Programming Review. New York: Population Council, 2011. Web. 1 Apr. 2016. http://www.popcouncil.org/uploads/pdfs/2012PGY_GirlsFirst_Education.pdf.
- 95 Adukia, Anjali. "Sanitation and Education." Cambridge: Harvard University, 2014. Web. http://scholar.harvard.edu/files/adukia/files/adukia_sanitation_and_education.pdf>.
- 96 "Making Education a Priority in the Post-2015 Development Agenda."
 Report of the Global Thematic Consultation on Education in the Post-2015
 Development Agenda. New York: UNESCO and UNICEF, 2013. Web.
 http://www.unicef.org/education/files/Making_Education_a_Priority_in_the_Post-2015_Development_Agenda.pdf.
- 97 Adukia, Anjali. "Sanitation and Education." Cambridge: Harvard University, 2014. Web. http://scholar.harvard.edu/files/adukia/files/adukia_sanitation and education.pdf>.
- 98 Ibid
- 99 "PUBERTY EDUCATION & MENSTRUAL HYGIENE MANAGEMENT." Paris: UNESCO, 2014. Web. 8 Mar. 2016. http://unesdoc.unesco.org/images/0022/002267/226792e.pdf>.
- 100 "WASH Standard 1: WASH Programme Design and Implementation." Humanitarian Charter and Minimum Standards in Humanitarian Response, The Sphere Project, http://www.spherehandbook.org/en/wash-standard-1-wash-programme-design-and-implementation/2.
- 101 Ward, Jeanne, and Julie Lafrenière. Thematic Area Guide for: Guidelines for Integrating Gender-Based Violence Interventions in Humanitarian Action:

























- Reducing Risk, Promoting Resilience and Aiding Recovery. Inter-Agency Standing Committee, 2015, https://gbvguidelines.org/wp/wp-content/uploads/2015/09/TAG-wash-08_26_2015.pdf.
- 102 "WASH in Schools Monitoring Package." New York: UNICEF, 2011. Web. 8 Mar. 2016. http://www.unicef.org/wash/schools/files/wash_in_schools_monitoringpackage_.pdf.
- 103 House, Sarah, Thérèse Mahon, and Sue Cavill. Menstrual Hygiene Matters: A resource for improving menstrual hygiene around the world. 2012. Web. https://www.wateraid.org/what-we-do/our-approach/research-and-publications/view-publication?id=02309d73-8e41-4d04-b2ef-6641f6616a4f.
- 104 Ibid
- 105 "PUBERTY EDUCATION & MENSTRUAL HYGIENE MANAGEMENT."
 Paris: UNESCO, 2014. Web. 8 Mar. 2016. http://unesdoc.unesco.org/images/0022/002267/226792e.pdf>.
- 106 Sommer, Marni. "Where the education system and women's bodies collide: The social and health impact of girls' experiences of menstruation and schooling in Tanzania." JOURNAL OF ADOLESCENCE 33.4 (2010): 521-529. Web. shttps://www.researchgate.net/publication/223035224_Where_the_education_system_and_women's_bodies_collide_The_social_and_health_impact_of_girls'_experiences_of_menstruation_and_schooling_in_Tanzaid.
- 107 "Zambia WASH in Schools." WASHplus, http://www.washplus.org/countries/zambia.html
- 108 SPLASH Spillover Effect. Unexpected Construction Resulting from SPLASH Project Interventions. WASHplus, 2016, http://www.washplus.org/resources/reports/2016/04/22/splash-spillover-effect-unexpected-construction-resulting-splash.html>.
- 109 Committee, Inter-Agency Standing. "Guidelines for Integrating Gender-Based Violence Interventions in Humanitarian Action: WASH." n.d. PDF. https://gbvguidelines.org/wp/wp-content/uploads/2015/09/TAG-wash-08_26_2015.pdf.
- 110 SPLASH Final Technical Report. USAID/WASHplus Project. WASHplus. 2016.
- 111 "Schools Promoting Learning Achievement through Sanitation and Hygiene (SPLASH)." n.d. Web. 15 Apr. 2016. http://www.fhi360.org/projects/schools-promoting-learning-achievement-through-sanitation-and-hygiene-splash.
- 112 Ibid
- 113 Ibid.
- 114 "Zambia WASH in Schools." WASHplus, http://www.washplus.org/countries/zambia.html.
- 115 Menstrual Hygiene Management among Schoolgirls in Eastern Province Zambia. WASHplus. 2016. USAID/WASHplus project.
- 116 Hernandez, Orlando. "SPLASH/Zambia: School Outcomes Study Major Preliminary Results." 2015. Web. 15 Apr. 2016. https://waterinstitute.unc.edu/files/2015/12/UNC-2015-Hernandez-2015.11.9.pdf>.
- 117 Hutton, Guy. "Benefits and Costs of the Water and Sanitation Targets for the Post-2015 Development Agenda." Working Paper. Washington: World Bank, 2015. Web. https://water_sanitation_assessment_-_hutton.pdf>.
- 118 Ibid
- 119 "Global costs and benefits of drinking-water supply and sanitation interventions to reach the MDG target and universal coverage." World Health Organization, 2012. Web. http://www.who.int/water_sanitation_health/publications/2012/globalcosts.pdf.
- 120 Ibid
- 121 Coordinate, Integrate, Invest: How Joint Child Health and Water, Sanitation and Hygiene (WASH) Interventions Can Deliver for Your Country's Future. WaterAid, 2017, https://washmatters.wateraid.org/publications/coordinate-integrate-invest-how-joint-child-health-and-water-sanitation-and-hygiene>.
- 122 "Global costs and benefits of drinking-water supply and sanitation interventions to reach the MDG target and universal coverage." World Health Organization, 2012. Web. http://www.who.int/water_sanitation_health/publications/2012/globalcosts.pdf>.
- 123 Morgan, Trevor. "The Socioeconomic Impact of Switching to LP Gas for Cooking: A Report of the World LP Gas Association." World LP Gas Association. 2015. Web. 11 Apr. 2016. http://www.wlpga.org/wp-content/uploads/2015/09/the-socioeconomic-impact-of-switching-to-lp-gas-for-cooking1.pdf.
- 124 "Investment in cleaner household energy yields major health and economic benefits." 4 May 2006. Web. http://who.int/mediacentre/news/releases/2006/pr22/en/.
- 125 Ibid
- 126 "ON THE FRONTLINE: CATALYSING WOMEN'S LEADERSHIP IN HUMANITARIAN ACTION." Action Aid, 2016. Web. shttp://www.actionaid.org/sites/files/actionaid/on_the_frontline_catalysing_womens_leadership_in_humanitarian_action.pdf>.

- 127 "The South Asia Women's Resilience Index Examining the role of women in preparing for and recovering from disasters." The Economist Intelligence Unit, 2014. Web. https://www.gdnonline.org/resources/The%20South%20Asia%20Women%27s%20Resilience%20Index%20Dec8.pdf.
- 128 "THE EFFECT OF GENDER EQUALITY PROGRAMMING ON HUMANITARIAN OUTCOMES." UN Women, Apr 2015. Web. .
- 129 "ON THE FRONTLINE: CATALYSING WOMEN'S LEADERSHIP IN HUMANITARIAN ACTION." Action Aid, 2016. Web. http://www.actionaid.org/sites/files/actionaid/on_the_frontline_catalysing_womens_leadership_in_humanitarian_action.pdf.
- 130 Peterman, Amber. "Women's Property Rights and Gendered Policies: Implications for Women's Long-term Welfare in Rural Tanzania." The Journal of Development Studies 47.1 (2011): 1-30. Web. 8 Mar. 2016. http://www.tandfonline.com/doi/abs/10.1080/00220381003600366>.
- 131 Ibid.
- 132 "Women and Natural Resources: Unlocking the Peacebuilding Potential." New York: United Nations Environment Programme, United Nations Entity for Gender Equality and the Empowerment of Women, United Nations Peacebuilding Support Office and United Nations Development Programme, 2013. Web. http://www.undp.org/content/dam/undp/library/crisis%20prevention/WomenNaturalResourcesPBreport2013. pdf>.
- 133 Peterman, Amber. "Women's Property Rights and Gendered Policies: Implications for Women's Long-term Welfare in Rural Tanzania." The Journal of Development Studies 47.1 (2011): 1-30. Web. 8 Mar. 2016. http://www.tandfonline.com/doi/abs/10.1080/00220381003600366>.
- 134 "Women in Agriculture: Closing the gender gap for development." The State of Food and Agriculture 2010-11. Rome: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, 2011. Web. 8 Mar. 2016. http://www.fao.org/docrep/013/i2050e/i2050e.pdf.
- 135 Nelson, Siblyn and Anne T.Kuriakose. "Gender and Renewable Energy: Entry Points for Women's Livelihoods and Employment." 2017. PDF. https://www.climateinvestmentfunds.org/sites/cif_enc/files/knowledge-documents/gender_and_re_digital.pdf.
- 136 "WaterCredit A Microfinance Solution." Water.org, http://water.org/about-us/our-work/watercredit/.
- 137 UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) 2017 Report: Financing Universal Water, Sanitation and Hygiene under the Sustainable Development Goals. World Health Organization, 2017, https://apps.who.int/iris/bitstream/handle/10665/254999/9789241512190-eng. pdf;jsessionid=351FE1D1EF99169AB401285166B9F5CF?sequence=1>.
- 138 "WaterCredit A Microfinance Solution." Water.org, http://water.org/about-us/our-work/watercredit/.
- 139 Thorpe, Devin. "'WaterCredit' Turns World's Poor Into Paying Customers." Forbes, Forbes Magazine, 6 Jan. 2016, watercredit-turns-worlds-poor-into-paying-customers/#7b49244f6c9a.
- 140 "WaterCredit A Microfinance Solution." Water.org, http://water.org/about-us/our-work/watercredit/.

























