

VIEWPOINT

# Adolescent Girls, Human Rights and the Expanding Climate Emergency

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## THE EXPANDING CLIMATE EMERGENCY AND ADOLESCENT GIRLS

In recent history, the number and scale of natural disasters, one of the major causes of humanitarian emergencies, have increased markedly. From 2000 to 2009, compared with the period from 1980 to 1989, there were 3 times more natural disasters across the globe, with climate-related events accounting for nearly 80% of the increase.<sup>1</sup> Since 2008, natural disasters such as floods, storms, and earthquakes have displaced an average of 26.4 million people per year. Even after adjusting for growth in population, the likelihood of being displaced by a disaster today is 60% higher than it was 40 years ago.<sup>2</sup> In 2013 alone, 97 million people were affected by natural disasters.<sup>3</sup>

Man-made disasters, the other major cause of humanitarian emergencies (by means, for example, of violence and conflict), remain a leading driver of displacement as well. According to the UN High Commissioner of Refugees (UNHCR), mass displacement reached unprecedented levels in 2014: “59.5 million individuals were forcibly displaced worldwide as a result of persecution, conflict, generalized violence, or human rights violations.”<sup>4</sup> Particularly in fragile and conflict-affected states, a complex mix of overlapping hazards—both armed conflict and natural disasters—plays a role in creating humanitarian crises, one that climate change is expected only to exacerbate.<sup>2</sup>

The University College London—*Lancet* Commission, in its landmark 2009 report, said, “Climate change is the biggest global health threat of the 21st century. Effects of climate change on health will affect most populations in the next decades and put the lives and wellbeing of billions of people at increased risk.”<sup>5</sup> Among the billions of people at increased risk are adolescents (10- to 19-year-olds), who account for 1 in 5 people in the world, or about 1.2 billion. The vast majority—90%—of adolescents live in developing countries (including China), and approximately 510 million of this group are girls.<sup>6</sup> The poorest adolescent girls living in the poorest communities—roughly more than 200 million girls living in households in the bottom 2 wealth quintiles—are at special risk for being deleteriously affected by climate change. Nonetheless, adolescent girls are not currently a specifically targeted, high-risk group in humanitarian relief efforts during emergencies, nor are they specifically engaged as a population whose involvement could advance national adaptation plans to mitigate the effects of climate change.

In 2011, Plan International<sup>1</sup> published a valuable monograph entitled “Weathering the Storm: Adolescent Girls and Climate Change,”<sup>7</sup> that called attention to the particular vulnerability of adolescent girls to the effects of climate change. It was a prescient analysis. In the intervening 4 years, the effect of climate change has become more pronounced, and there is a clearer vision of its consequences. The human rights community has more urgently

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<sup>1</sup>Plan is a nonprofit organization that, since 1937, has been working in 50 developing countries to help children (see <https://plan-international.org/https://plan-international.org/>).

addressed the effect of climate change, especially on socially excluded groups, and practitioners have begun to organize an increasingly accelerated response to the plight of adolescent girls in humanitarian emergencies, both those caused by natural disasters and armed conflicts.<sup>8</sup> The overall reaction to the cataclysm suffered by adolescent girls, however, has been slower than the data warrant.<sup>9</sup>

### THE HUMAN RIGHTS COMMITMENTS: ARTICULATED BUT UNFUNDED AND NOT UPHELD

The human rights of adolescent girls are firmly enshrined in international human rights (IHR) law, notably, in the Convention of the Rights of the Child<sup>10</sup> and the Convention on the Elimination of All Forms of Discrimination Against Women,<sup>11</sup> with their foundations earlier established by the Universal Declaration of Human Rights<sup>12</sup>—all affirmed by the vast majority of the world's governments. The breadth of these enumerated rights, which span the range of civil and political rights, as well as social, economic, and cultural rights, recognizes adolescent girls' status as both children and women, and as such, their particular susceptibility to a wide range of human rights abuses due to their youth and their sex. But adolescent girls face enormous challenges in the realization of their rights because the barriers they face are embedded in social systems that are deeply discriminatory and that systematically oppress and exploit them.

Thus, despite the extensive and specific rights enshrined in IHR law, a wide range of social actors—including governments, institutional bodies, nongovernment organizations (NGOs), local communities, and families—still fail to fulfill, protect, and promote the rights of adolescent girls under “baseline” circumstances. And it is the

<sup>ii</sup>The phrase “living in emergencies” was first used by the organizers of the Haitian Adolescent Girls Network, one of the first efforts to explicitly recognize the needs of adolescent girls relatively early in an emergency (4 months after the Haitian earthquake). The effort was mounted when it was observed by many of the organizations that girls did not have a place to safely meet and the disaster dramatically increased their risk for sexual abuse.<sup>13</sup>

<sup>iii</sup>“Child marriage fits most of the criteria for enslavement established by Antislavery International: child brides are forced to work and serve others under the threat of mental or physical punishment; they are dehumanized; they are treated as property; their movements are severely restricted; and, most crushingly, their futures are obliterated.”<sup>14</sup>

poorest girls living in the poorest communities who suffer the most. At baseline, they are already living in an “emergency.”<sup>iii</sup> These girls too often experience a perfect storm of abuses and sequelae, including the ravages of “child marriage”<sup>iiii15,16</sup>; early first birth and its attendant elevated risk of death<sup>17,18</sup>; single motherhood and its relation to long-term poverty and child mortality<sup>19</sup>; extensive sexual and other forms of gender-based violence<sup>20–24</sup>; disproportionate HIV infection<sup>25–27</sup>; lack of access to secondary and higher education<sup>28,29</sup>; lack of basic reproductive, sexual, and health care services; exclusion from local economies and the benefits of new technologies; and difficulty safely controlling their income.<sup>30,31</sup>

And although the body of IHR law extends the obligations of many social actors (e.g., governments and NGOs), in post-disaster situations, these actors often fail adolescent girls in all stages of humanitarian relief as well.<sup>6</sup> Looming climate-change events and the associated forced displacement of large populations promise further to undermine adolescent girls' realization of their rights.

### ABUSES OF ADOLESCENT GIRLS INTENSIFY IN HUMANITARIAN EMERGENCIES

Although all suffer in humanitarian emergencies, there are important differences in the experience by sex and age. A study of data from 141 countries over the period from 1981 to 2002 found that women and girls have relatively higher mortality rates than men and boys in natural disasters in societies where women have few socioeconomic rights and their economic status compared with men is lower. The bigger the disaster (as approximated by the number of deaths relative to population size), the larger the effect is on the observed gender gap in life expectancy (which includes both the immediate effects of the disaster and its subsequent impacts).<sup>32</sup> For example, 65% of those who died in Aceh Province, Indonesia, in the 2004 tsunami were female.<sup>33</sup> Women were 61% of fatalities caused by Cyclone Nargis in Myanmar in 2008.<sup>34</sup> Data from the 1993 Nepal flood reveal a higher mortality rate for girls relative to others; fatality rates were 13.3 per 1000 for girls, 9.4 per 1000 for boys, 6.1 per 1000 for women, and 4.1 per 1000 for men.<sup>35</sup> These excess female deaths have been attributed to the exacerbation of previously existing patterns of discrimination/devaluation that render women and girls more vulnerable than men and boys, including

disparities in access to information and economic resources; social norms and roles, which restrict females' physical mobility<sup>36</sup> and limit their personal freedom of choice before, during, and after disasters; as well as resource shortages and the temporary breakdown of social order.<sup>31</sup>

Disasters exacerbate other discriminatory practices as well, such as child marriage. Most of the 25 countries<sup>iv</sup> with the highest rates of child marriage are considered weak states and/or at high risk for natural disasters.<sup>37</sup> In Bangladesh, for example, researchers documented that cyclical climate change was creating significant economic hardships on families, and concluded that it led to forced marriages of very young girls because dowry is cheaper at younger ages, "resulting in many dropping out of school, and in many cases experiencing violence."<sup>38</sup> Another nuanced, covariate analysis looked at the influence of environmental change on the risk for early marriage among 9000 Bangladeshi adolescent girls and revealed that, although river-eroded, cyclone-affected, and salinity-affected areas did not experience higher marriage rates, *abasan* or displaced communities did have significantly higher early marriage rates.<sup>39</sup> These studies underscore that by increasing scarcity, poverty, insecurity, and displacement, climate change amplifies drivers of child marriage.

In humanitarian emergencies, girls' education often suffers disproportionately compared to boys. According to a 2010 UNHCR report, average enrollment rates for refugee children in camps and urban settings in 75 countries were 76% for primary school (ages 6–11 years) and 36% for secondary school (ages 12–17 years).<sup>40</sup> In comparison, in 2008, the global primary school enrollment rate was 90% and the global secondary school enrollment rate was 67%.<sup>v,42</sup> Compared with their male peers, refugee girls were less likely to attend school; on average, there were approximately 9 refugee girls in school for every 10 boys at the primary level, and even fewer at the secondary level. However, global averages mask significant regional variations.

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<sup>iv</sup>World Vision identifies the top 10 countries with the highest child marriage rates: Niger, Chad, Bangladesh, Guinea, Central African Republic, Mali, Mozambique, Nepal, Malawi, and Ethiopia. (See more at: <http://www.worldvision.org/news-stories-videos/ten-worst-places-child-marriage#sthash.NUGxAlv4.dpuf>.)

<sup>v</sup>According to the World Bank, "even in the poorest countries, average enrollment rates at the primary level have surged above 80 percent and completion rates, above 60 percent. And between 1991 and 2007, the ratio of girls to boys in primary and secondary education in the developing world improved from 84 to 96 percent."<sup>41</sup>

For example, in camps in South and West Asia, especially in Pakistan, 4 girls are enrolled for every 10 boys at the primary level, whereas in camps in Sub-Saharan Africa, 9 girls are enrolled for every 10 boys at the primary level, but only 6 girls are enrolled for every 10 boys at the secondary level. In Eastern and the Horn of Africa, only 5 girls are enrolled for every 10 boys.<sup>43</sup> A recent survey of a community in an urban setting in Gaziantep, Turkey, revealed that refugee Syrian girls (ages 6–17) accounted for 96% of out-of-school girls in the community. None of the girls (age <18) in the study who were married were in school.<sup>44</sup>

Finally, in armed conflicts, women and children are disproportionately targeted and constitute the majority of victims. Gender-based violence, including sexual violence, increases as well.<sup>45</sup> A 2015 report of Secretary General of the UN Security Council on conflict-related sexual violence, which focuses on 19 country situations<sup>vi</sup> for which credible information is available, highlighted that in 2014, sexual violence against adolescent girls continued to be a "disturbing trend."<sup>46</sup>

There is some evidence that suggests climate change may cause conflict, although there is vibrant debate in this newly emergent field.<sup>47</sup> A 2013 meta-analysis of 60 of the most rigorous quantitative studies revealed "a remarkable convergence of results," showing that climate change increases the likelihood of all types of violence, including rape, riots, and civil war. The authors write, "We find strong causal evidence linking climatic events to human conflict across a range of spatial and temporal scales and across all major regions of the world. The magnitude of climate's influence is substantial: for each one standard deviation change in climate toward warmer temperatures or more extreme rainfall, median estimates indicate that the frequency of interpersonal violence rises 4% and the frequency of intergroup conflict rises 14%."<sup>48</sup> The authors discuss a number of plausible means, although noting the evidence is inconclusive, by which climate change may lead to violence, including increasing resource scarcity and declining economic conditions; rising food prices; weakened government

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<sup>vi</sup>It covers 13 conflict settings, 5 post conflict countries and 1 additional situation of concern. The 19 countries are: Afghanistan, Central African Republic, Colombia, Democratic Republic of the Congo, Iraq, Libya, Mali, Myanmar, Somalia, South Sudan, Sudan (Darfur), Syrian Arab Republic, Yemen, Bosnia and Herzegovina, Cote d'Ivoire, Liberia, Nepal, Sri Lanka, Nigeria.

and rising lawlessness; increasing migration, urbanization, and inequality; and enhanced aggression.

Climate change is only one of many factors that might contribute to conflict, however, with the forecast of more climate change events on the horizon, there may be an increase in the already staggering levels—both in peaceful regions and in conflict areas—of violence against and exploitation of women and girls, particularly adolescent girls.<sup>49</sup>

### CONFRONTING THE RESISTANCE TO INVESTING IN ADOLESCENT GIRLS

Why is it that, after decades of declarations, resolutions, conventions, and international agreements to protect the human rights of girls, and in the face of increasing advocacy on their behalf, the actual practice on the ground has been slow to meet their needs, recognize fully their potential, and engage their talents?

Our hypothesis is that adolescent girls, especially the poorest of them, are deployed as “credit cards”<sup>vii</sup> in normal times, and they become even more valuable yet less visible in crises. Their goodwill and labor mediate daily and seasonal acute shortages; they are the go-to safety net for maintaining family and financial integrity. Adolescent girls’ sexuality, fertility, and labor are fungible assets. In emergencies, not only do immediate family and the local community draw on their assets, but new actors also join the fray. For example, underfunded emergency programs rely on their labor, and human traffickers spring up in thinly disguised forms, such as marriage brokers or labor brokers. At its worst, girlhood is a process of systematic de-authentication, deprivation, and isolation. Growing up “female” often entails the increasing loss of “self”: loss of autonomy, submission to physical scarification (such as female genital mutilation), increasing limits on spatial access and security,<sup>36</sup> and restriction of social expression every year until puberty and beyond.

Thus, “prepared” for responsibilities that others designate for them, and with few socially acceptable safe exits from this scenario, girls function as societal shock absorbers. They offset scarcity by walking further for water, fuel, food, and other resources affected by acute seasonal and long-term climate factors.

<sup>vii</sup> Author JB previously suggested that adolescent girls operate as a “universal credit card” in an August 29, 2014 blog, “The Adolescent Girl Moment: Passion is Our Fuel But Not Our Plan,” found here: <http://girlsglobe.org/2014/08/29/the-adolescent-girl-moment-passion-is-our-fuel-but-not-our-plan/>.

Girls’ marriages—often not of their choice—are concluded when the time is right for the family, rather than the girl,<sup>50</sup> and these marriages feature economic exchanges, whether bride price or dowry, from which the girl herself does not benefit. Sudden or sustained scarcity after a disaster may induce poor families to marry their daughters early and pay a smaller dowry by granting “husbands” earlier access to girls’ sexual and labor services.<sup>37</sup>

Disaster often brings dislocation and the separation of family members, requiring the remaining adults—especially mothers—to transfer emergency protection, caring, and feeding responsibilities for younger children to already disproportionately burdened older girls.<sup>51</sup> Adolescent girls are often unacknowledged co-heads and managers of households. The girls under the greatest stress may literally be invisible: sequestered in mobile and temporary “households.” Other girls are hidden in social constructs. The 14-year-old girl supporting her devastated mother, as they cross the border, is viewed as a daughter, not as the de facto household head. A girl spotted in the marketplace provisioning (and risking forced sexual relations or inviting poverty-driven sexual exchanges<sup>52</sup>) may be defined as “doing errands.” The girl married as a child is called “a married woman.” The girl sold for a day-long sexual exchange—*urfi* “marriages”—has been “married and divorced,” not prostituted.

Girls’ flexibility in transitioning among multiple roles is part of their invisibility. One moment they are responsible for finding food or safe water, the next caring for a younger child or aged family member, and the next repairing the shelter. They are essential protectors of the family, and yet they are legally defined as dependents. From a policy perspective, particularly in disaster relief situations, they are embedded in the family and rarely treated as independent constituents for entitlements or ration cards. The scarcity-mediation scenario they navigate is rarely viewed as abusive; their human rights have been privatized to the family and arrogated to the community.

With environmental and conflict-driven humanitarian emergencies now extending years and even decades, the short- and long-term tradeoffs made in the name of expediency—tradeoffs that deny girls their rights and the resources they need, and that fail to engage their talents—are increasingly difficult to justify. We must now become attuned to how much we—families, communities, governments, and the international community—rely on pliable and capable adolescent

girls. Without such awareness, dedicated programs to support and honor girls as agents of change and resilience may subconsciously be resisted. As adolescent girls realize their rights to life, liberty, and social and economic participation, others' control of their sexuality, fertility, and labor is reduced. Will this be viewed as a gain or a loss?

## INVESTING IN ADOLESCENT GIRLS

**The Girls in Emergencies Collaborative's Call to Action.** In December 2013, concerned that the rhetoric about girls was at risk of becoming an empty brand in the humanitarian community, a group of professionals (including the authors), many of whom represent the largest organizations that respond to emergencies, climate-based and otherwise, came together as the Girls in Emergencies (GIE) Collaborative.<sup>viii</sup> It is a partnership aimed at animating the rhetoric around girls into concrete new learning methods and field activities. Its mission is to make the emergency response immediately protective of and specifically responsive to the most at-risk populations of adolescent girls. The GIE Collaborative developed an expert consensus document (see Statement and Action Agenda from the Girls in Emergencies Collaborative [2015;81:331–2]), the framework of which includes gathering critical information about girls, to serve them in the earliest phases of an emergency—especially in the first 45 days, when risks may be highest. The goals are to 1) protect the most at-risk adolescent girls, 2) serve and support them with specific tailored initiatives through defined channels, and 3) engage adolescent girls in the recovery process. Girls have untapped capacity to assist in the rebuilding efforts after the acute phase of humanitarian emergencies.

It should be noted that throughout the GIE Collaborative's deliberations, the group also discussed the need to prepare for disasters. It was understood that, as underserved as adolescent girls now are during humanitarian emergencies, it would not be enough just to focus on relief and recovery efforts.

<sup>viii</sup>The GIE Working Group grew out of the Girls in Emergencies workshop of the Adolescent Girls Learning Circle lead by the Population Council, and its steering committee includes representatives from major organizations such as International Rescue Committee; Mercy Corps; Plan, USAID; the Women's Refugee Commission and the Human Rights Program, Arnholt Institute for Global Health at Mount Sinai.

**Engaging Adolescent Girls Before the "Emergency".** Over the past several years, key climate-change actors have been calling for climate-change solutions to be gender responsive. Since 2008, numerous official gender references have entered the UN Framework Convention on Climate Change negotiation text, and the final outcomes of the Cancun (2010) and Durban (2011) conferences included 8 and 17 references to gender, respectively.<sup>53</sup> A guiding principle for the formulation of National Action Plans calls for actions that "follow a country-driven, gender-sensitive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems."<sup>54</sup> International climate-change meetings now often include gender-focused sessions, and many countries have now developed Climate Change Gender Action Plans (ccGAPs) that seek to train women about the linkages between sex and climate change and build the capacity of women's organizations to respond.<sup>55</sup>

With these global mandates and plans in place, the next step is to make them a reality on the ground. We can and should bring several disciplines together—effective development practices, best principles of adolescent girl programming,<sup>56</sup> human rights monitoring, and the expanding science of climate change—to identify and prioritize geographies and actions that target adolescent girls. As more actors develop plans of action, especially ccGAPs, we propose the following for consideration:

1. *Identify geographic areas for preemptive investment in places where girls are subject to both baseline human rights abuses and climate challenges.* To set priorities, data on countries and areas subject to the most serious chronic and acute climate risks can be combined with granular data on where girls face the greatest human rights abuses. For example, there are 113 subnational zones where more than 15% of the girls are married under age 15.<sup>57</sup> A high proportion of these sizable districts are heavily affected by climate change. Efforts to end child marriage should focus *first* on these regions.
2. *Craft roles appropriate to adolescent girls to assist in the delivery of health promotion, human development, and climate mitigation activities.*<sup>58</sup> The poorest places under threat of the worst climate consequences have weak capacity to deliver health and development services. Adolescent girls have deep commitments to their communities and untapped capacity that could significantly and effectively extend local delivery of such services. For example, older adolescent girls could be trained to assist community health workers in a range of activities (e.g., installation of bed nets,

and monitoring and improving the safety of water sources.)

3. *Build girls social and economic assets in ways that survive transitions.* Adolescent girls are more likely to migrate<sup>59</sup> and experience more transitions than their male peers,<sup>60</sup> so new asset-building efforts attuned to the sudden displacements possible in climate emergencies should seek to increase their resilience. For example, keeping girls in touch with each other by fostering their networking and more permanent social identities, providing personal documentation that is under their control, imparting financial literacy early, and establishing savings accounts and financial products that can be accessed even if they move or marry: these social and economic assets will enhance recovery.
4. *Foster adolescent girls' knowledge and control of green procedures and production techniques and technologies.* For example, the Sierra Leone Adolescent Girls Network will roll out 240 girls clubs stocked with solar-powered lanterns (which also charge phones and computers) to light meetings and “study” halls and incubate small green businesses (Chernoh Alpha M Bah, Sarah Blake and Jonathan Sury, personal communication, August 2015). In Burkina Faso, girl-managed collective gardens provide essential

nutrients for both their own use and as an adjunct source of income.<sup>61</sup>

5. *Track health and poverty effects and human rights abuses exacerbated by climate change on key populations.* The 2015 Lancet Commission on Health and Climate Change called for the creation of a coalition to monitor progress and action on health dimensions of the climate crisis.<sup>62</sup> Indices to monitor the effects of the climate crisis specifically on adolescent girls and the actions taken to protect, serve and ultimately engage them as change agents should be integrated into any forward-going plan. Funds for this initiative should be formally appropriated and specifically allow for experimental programs.

We urge key actors responding to both the threats and opportunities that climate change poses to understand adolescent girls as exceptionally at risk on the one hand, and as exceptionally resilient and underengaged on the other. As a global community, we should be investing now in adolescent girls and centrally anchoring them in climate adaptation strategies. It may be one of the places where we can have the greatest effect on the future.

## REFERENCES

1. Leaning J, Guha-Sapir D. Natural disasters, armed conflict, and public health. *N Engl J Med* 2013;369:1836–42.
2. Norwegian Refugee Council/Internal Displacement Monitoring Centre (NRC/IDMC). Global estimates 2015: people displaced by disasters, July 2015. Available at: <http://www.internal-displacement.org/assets/library/Media/201507-globalEstimates-2015/20150713-global-estimates-2015-en-v1.pdf>. Accessed July 24, 2015.
3. OCHA. World humanitarian data and trends 2014. New York: United Nations. Available at: <http://www.unocha.org/data-and-trends-2014/downloads/World%20Humanitarian%20Data%20and%20Trends%202014.pdf>; 2014. Accessed July 15, 2015.
4. UN High Commissioner for Refugees (UNHCR). UNHCR global trends forced displacement in 2014: World at war. New York: UNHCR. Available at: <http://www.unhcr.org/556725e69.html>; 2015. Accessed July 5, 2015.
5. Costello A, Abbas M, Allen A, et al. *Managing the health effects of climate change: Lancet and University College London Institute for Global Health Commission.* *Lancet* 2009;373:1693–733.
6. United Nations. World population prospects: The 2012 revision. New York: United Nations. Available at: [http://esa.un.org/wpp/documentation/pdf/wpp2012\\_%20key%20findings.pdf](http://esa.un.org/wpp/documentation/pdf/wpp2012_%20key%20findings.pdf); 2013. Accessed July 25, 2015.
7. Swarup A, Dankelman I, Ahluwalia K, Hawrylyshyn K. Weathering the storm: adolescent girls and climate change. Plan International. June 2011. Available at: <http://www.plan-uk.org/resources/document/35316/>. Accessed July 6, 2015.
8. Siddiqi A. Missing the emergency: shifting the paradigm for relief to adolescent girls. New York: Coalition for Adolescent Girls. Available at: <http://coalitionforadolescentgirls.org/knowledge/girls-in-emergencies/>; 2012. Accessed July 18, 2015.
9. Women's Refugee Commission. I'm here: adolescent girls in emergencies report. New York: WRC. Available at: <https://womensrefugeecommission.org/resources/document/1078-i-m-here-report-final-pdf>; 2014. Accessed July 11, 2015.
10. UN General Assembly. Convention on the Rights of the Child, November 20, 1989, United Nations, Treaty Series, vol. 1577, p. 3. Available at: <http://www.refworld.org/docid/3ae6b38f0.html>. Accessed July 5, 2015.
11. UN General Assembly. Convention on the Elimination of All Forms of Discrimination Against Women, December 18, 1979, United Nations, Treaty Series, vol. 1249, p. 13. Available at: <http://www.refworld.org/docid/3ae6b3970.html>. Accessed July 5, 2015.
12. UN General Assembly. Universal Declaration of Human Rights, December 10, 1948, 217 A (III). Available at: <http://www.refworld.org/docid/3ae6b3712c.html>. Accessed July 5, 2015.
13. Haiti Adolescent Girls Network. Safe spaces for adolescent girls in Haiti. Forced migration review. Available at: <http://www.fmreview.org/young-and-out-of-place/nieradka.html>. Accessed August 15, 2015.
14. Bruce J. Lost girls. In: Cohen DE, ed. *What matters: The World's Preeminent Photojournalists and Thinkers Depict Essential Issues of Our Time.* New York: Sterling; 2008.
15. United Nations Children's Fund (UNICEF). The state of the world's children 2015. Executive summary. New York: UNICEF. Available at:

- [http://www.unicef.org/publications/files/SOWC\\_2015\\_Summary\\_and\\_Tables.pdf](http://www.unicef.org/publications/files/SOWC_2015_Summary_and_Tables.pdf); 2014. Accessed July 27, 2015.
16. United Nations Population Fund (UNFPA). *Marrying too young: end child marriage*. New York: United Nations. Available at: <http://www.unfpa.org/end-child-marriage>; 2012. Accessed July 25, 2015.
  17. World Health Organization (WHO). *Adolescent pregnancy*. Fact Sheet No. 364. Geneva, Switzerland: WHO. Available at: <http://www.who.int/mediacentre/factsheets/fs364/en/>; 2014. Accessed July 25, 2015.
  18. Patton GC, Coffey C, Sawyer SM, et al. Global patterns of mortality in young people: a systematic analysis of population health data. *Lancet* 2009;374:881–92.
  19. Clark S, Hamplova D. Single motherhood and child mortality in Sub-Saharan Africa: a life course perspective. *Demography* 2013;50:1521–49.
  20. Abrahams N, Devries K, Watts C, et al. Worldwide prevalence of non-partner sexual violence: a systematic review. *Lancet* 2014;383:1648–54.
  21. Centers for Disease Control and Prevention. *Towards a violence free generation: using science to fuel action and end violence against children*. Available at: <http://www.cdc.gov/violenceprevention/vacs/index.html>. Accessed July 25, 2015.
  22. United Nations Children's Fund (UNICEF). *Hidden in plain sight: a statistical analysis of violence against children*. New York: UNICEF. Available at: [http://files.unicef.org/publications/files/Hidden\\_in\\_plain\\_sight\\_statistical\\_analysis\\_EN\\_3\\_Sept\\_2014.pdf](http://files.unicef.org/publications/files/Hidden_in_plain_sight_statistical_analysis_EN_3_Sept_2014.pdf); 2014. Accessed July 28, 2015.
  23. World Health Organization. *WHO multi-country study on women's health and domestic violence against women: summary report of initial results on prevalence, health outcomes and women's responses*. Geneva, Switzerland: WHO. Available at: [http://www.who.int/gender/violence/who\\_multicountry\\_study/summary\\_report/summary\\_report\\_English2.pdf](http://www.who.int/gender/violence/who_multicountry_study/summary_report/summary_report_English2.pdf); 2005. Accessed July 4, 2015.
  24. Bruce J. *Violence against adolescent girls: a fundamental challenge to meaningful equality*. New York: The Population Council, Inc.. Available at: [http://www.popcouncil.org/uploads/pdfs/2012PGY\\_GirlsFirst\\_Violence.pdf](http://www.popcouncil.org/uploads/pdfs/2012PGY_GirlsFirst_Violence.pdf); 2011. Accessed July 26, 2015.
  25. United Nations Programme on HIV/AIDS (UNAIDS). *The Gap Report*. JC2656 Geneva: UNAIDS; 2014, updated September 2014. ISBN 978-92-9253-062-4. Available at: [http://www.unaids.org/sites/default/files/media\\_asset/UNAIDS\\_Gap\\_report\\_en.pdf](http://www.unaids.org/sites/default/files/media_asset/UNAIDS_Gap_report_en.pdf). Accessed on July 4, 2015.
  26. Bruce J, Hallman K. Reaching the girls left behind. *Gend Dev* 2008;16:227–45.
  27. Bruce J, Temin M, Hallman K. Evidence based approaches to protecting adolescent girls at risk of HIV. USAID AIDSTAR-One Spotlight on Gender. March 2012.
  28. United Nations Educational, Scientific and Cultural Organization (UNESCO). *Education for all 2000–2015: achievements and Challenges*. Paris: UNESCO; 2015.
  29. Lloyd C, Young J. *New lessons: the power of educating adolescent girls: a girls count report on adolescent girls*. New York: The Population Council. Available at: [www.ungei.org/resources/files/2009PGY\\_NewLessons.pdf](http://www.ungei.org/resources/files/2009PGY_NewLessons.pdf); 2009. Accessed August 15, 2015.
  30. Population Council. *Building Assets for Safe, Productive Lives*. New York: The Population Council, Inc.; 2005.
  31. Bertini C. *Girls Grow: A Vital Force in Rural Economics*. Chicago: The Chicago Council on Global Affairs; 2011.
  32. Neumayer E, Plümpert T. The gendered nature of natural disasters: the impact of catastrophic events on the gender gap in life expectancy, 1981–2002. *Ann Assoc Am Geogr* 2007;97:551–66.
  33. Mazurana D, Benelli P, Gupta H, Walker P. *Sex and Age Matter: Improving Humanitarian Response in Emergencies*. Medford: Feinstein International Center, Tufts University; 2011.
  34. Castañeda I, Gammage S. Gender, global crises, and climate change. In: Jain D, Elson D, eds. *Harvesting Feminist Knowledge for Public Policy*. New Delhi, India: Sage Publications; 2011.
  35. Pradhan EK, West KP Jr, Katz J, et al. Risk of flood-related mortality in Nepal. *Disasters* 2007;31:57–70.
  36. Hallman K, Kenworthy N, Diers J, Swan N, Devnarain B. The shrinking world of girls at puberty: violence and gender-divergent access to the public sphere among adolescents in South Africa. *Glob Public Health* 2014;10:1–17.
  37. Vision World. *Untying the Knot: Exploring Early Marriage in Fragile States*. London: World Vision UK; 2013.
  38. Alston M, Whittenbury K, Haynes A, Godden N. Are climate challenges reinforcing child and forced marriage and dowry as adaptation strategies in the context of Bangladesh? *Womens Stud Int Forum* 2014;47:137–44.
  39. Ainul S, Amin S. Environmental vulnerability and early marriage in Southern Bangladesh. Paper presented at Population Association of America Annual Meeting in San Diego, California, April 30–May 2, 2015.
  40. UN High Commissioner for Refugees (UNHCR). *Report on the Enrolment Rates to Primary and Secondary Education in UNHCR Operations*. Geneva, Switzerland: UNHCR Department of International Protection; 2010.
  41. World Bank. *Learning for all: investing in people's knowledge and skills to promote development*. Available at: [http://siteresources.worldbank.org/EDUCATION/Resources/ESSU/Education\\_Strategy\\_4\\_12\\_2011.pdf](http://siteresources.worldbank.org/EDUCATION/Resources/ESSU/Education_Strategy_4_12_2011.pdf). Accessed August 15, 2015.
  42. UNESCO. *Education for All Global Monitoring Report 2011: The hidden crisis: Armed conflict and education*. Paris: UNESCO; 2011.
  43. Dryden-Peterson S. *Refugee Education: A Global Review*. New York: UNHCR; 2011.
  44. Mercy Corps & Women's Refugee Commission. *"The Most Vulnerable" Adolescents in Gaziantep: Proactive Research to Ensure Programming Responds to Their Needs*. Portland, Oregon: Mercy Corp; 2015.
  45. UN Security Council. *Report of the Secretary-General on women, peace and security (S/2002/1154)*. Available at: <http://www.un.org/womenwatch/ods/S-2002-1154-E.pdf>. Accessed July 25, 2015.
  46. UN Security Council. *Report of the Secretary General on Conflict-related Sexual Violence. (S/2015/203)*. March 2015. Available at: [http://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s\\_2015\\_203.pdf](http://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s_2015_203.pdf). Accessed July 28, 2015.
  47. Jaeger J. Will climate change lead to conflict or cooperation? *IPS News Agency*. Aug 4, 2014. Available at: <http://www.ipsnews.net/2014/08/will-climate-change-lead-to-conflict-or-cooperation/>. Accessed July 25, 2015.
  48. Hsiang SM, Burke B, Miguel E. Quantifying the influence of climate on human conflict. *Science* 2013;341:1235367.
  49. *Together for Girls*. *Ending the epidemic of violence against children*. Available at: [http://www.togetherforgirls.org/wp-content/uploads/TfG\\_Fact\\_sheet\\_overview.pdf](http://www.togetherforgirls.org/wp-content/uploads/TfG_Fact_sheet_overview.pdf). Accessed July 25, 2015.
  50. Mourtada R. *Early Marriage in Syrian Conflict-Affected Population*. Lebanon: American University of Beirut and Women's Refugee Commission; 2014.
  51. Lloyd C, Grant M, Ritchie A. Gender differences in time use among adolescents in developing countries: implication of rising school enrollment rates. *J Res Adolesc* 2008;18:99–120.

52. Hallman K, Cerna-Turoff I, Matee N. 2015. Participatory research results from training with the Mabinti Tushike Hatamu out-of-school girls program. Tanzania 2015. Available at: [http://www.popcouncil.org/uploads/pdfs/2015PGY\\_TanzaniaParticipatoryResults.pdf](http://www.popcouncil.org/uploads/pdfs/2015PGY_TanzaniaParticipatoryResults.pdf). Accessed July 26, 2015.
53. International Union for Conservation of Nature (IUCN) Global Gender Office. The Art of Implementation Gender Strategies Transforming National and Regional Climate Change Decision Making. Gland, Switzerland: IUCN; 2012.
54. United Nations Framework Convention on Climate Change (UNFCCC). Least developed countries national adaptation plan process: a brief overview. Available at: [http://unfccc.int/resource/docs/publications/publication\\_ldc\\_napp\\_2013.pdf](http://unfccc.int/resource/docs/publications/publication_ldc_napp_2013.pdf). Accessed July 29, 2015.
55. International Union for Conservation of Nature (IUCN). Climate change gender action plans. Available at: <http://genderandenvironment.org/works/climate-change-gender-action-plans-cgaps/>. Accessed July 28, 2015.
56. Bruce J. Commentary: investing in the poorest girls in the poorest communities early enough to make a difference. *Glob Public Health* 2015;10:225–7.
57. Bruce J, Erulkar A. A short history of the long struggle to identify and eliminate child marriage: Amhara, Ethiopia as a case study. In: Chesler E, McGovern T, eds. *Women and Girl Rising: Progress and Resistance around the World*. New York: Routledge; 2016.
58. Catino J. *The Health of Vulnerable Adolescent Girls: A Strategic Return on Investment*. New York: Population Council; 2012.
59. Temin M, Montgomery M, Engebretsen S, Barker K. *Girls on the Move: Adolescent Girls and Migration in the Developing World*. New York: Population Council; 2013.
60. Mensch BS, Soler-Hampejsek E, Kelly CA, Hewett PC, Grant MJ. Challenges in measuring the sequencing of life events among adolescents in Malawi: a cautionary note. *Demography* 2014;51:277–85.
61. Brady M, Saloucou L, Chong E. *Girls' Adolescence in Burkina Faso: A pivot point for social change*. New York: Population Council; 2007.
62. Watts N, Adger WN, Agnolucci P, et al. Health and climate change: policy responses to protect public health. *Lancet*. [http://dx.doi.org/10.1016/S0140-6736\(15\)60854-6](http://dx.doi.org/10.1016/S0140-6736(15)60854-6); 2015.

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