Understanding the complex linkages between climate change and gender-based violence

Sara Bonilla-Anariba[1], Kathleen Sexsmith[1], Brian C. Thiede[1,a]

[1] Department of Agricultural Economics, Sociology, and Education, Pennsylvania State University, University Park, PA, USA.
[a] Corresponding author; bct11@psu.edu

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Abstract
Gender-based violence (GBV) is a significant and widespread social problem and concern for human health. The determinants of GBV are complex and include many factors that are sensitive to the impacts of climate change. However, the links between climate and GBV have been understudied relative to many of the other social costs of climate change. In this review, we describe how climate change can shape the incidence of GBV, in isolation and through feedback loops, through its effects on human physiological and psychological well-being, economic security, migration patterns, natural resource scarcity, and infrastructural and service capacity. Empirical and theoretical gaps in this body of literature are significant and stem from an over-reliance on traditional measures of domestic violence. We argue that researchers should develop both quantitative and qualitative approaches for studying GBV and its relationship to climate variability that allow for a more expansive explanation of the phenomenon.

Keywords
Climate change, gender-based violence, displacement, inequality, vulnerability

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Introduction

The social and economic costs of anthropogenic climate change are expected to be large and widespread[1]. Temperature and precipitation variability have been implicated in a range of demographic and health outcomes, including changes in food and nutritional security, human migration, and birth rates[2–4]. An emerging line of research has also drawn links between climate variability and the incidence of gender-based violence (GBV), which undermines the health of both those who experience it and those who are indirectly exposed (e.g., children of victims)[5–7]. Despite the significance of GBV to human well-being, this climate-GBV literature remains limited and underdeveloped. As such, it is characterized by conceptual, methodological, and empirical limitations. By addressing these gaps, scholars can better understand the causes and consequences of GBV, improve estimates of the social costs of climate change, and design and implement effective mitigation and adaptation strategies that improve resilience to climate change.

Within this context, the goals of this review are to place the spotlight on hypothesized linkages between climate change and GBV, critically assess the state of the literature in this area, and outline important goals for future research on this important topic. We proceed as follows. First, we define GBV and outline the conceptual reasons why GBV may be affected either directly by environmental changes or indirectly by their downstream socioeconomic impacts. We then describe empirical findings from previous studies on this topic and assess the major strengths and limitations of the existing evidence. We conclude by outlining several recent conceptual and empirical developments that, in our view, are needed to improve scholarly knowledge about the links between climate change and GBV. Overall, we argue that new research employing a broader conceptualization of GBV, collecting and analyzing new quantitative and qualitative data from understudied locations, and closely examining causal mechanisms will significantly advance this literature.

Climate change and GBV: conceptualization, measurement, and evidence

Defining GBV

GBV encompasses various forms of harmful acts or behaviors directed at individuals based on their gender[8,9]. This violence includes physical, sexual, psychological, and emotional abuse, such as intimate partner violence (IPV), sexual assault, human trafficking, and forced marriage, among others[9,10]. The global prevalence of GBV is high by most standards. For example, global estimates indicate that approximately one-in-four women experience physical and(or) sexual violence by an intimate partner in their lifetime[11,12]. These figures are almost certainly an underestimate given systematic under-reporting, the perpetration of other forms of violence, and the perpetration of GBV by non-intimate partners[7] GBV predominantly impacts women and girls due to systemic power imbalances between men and women[8,9]. Nevertheless, it is crucial to recognize that GBV is not exclusively perpetrated against women. Individuals who identify as men, boys, and transgender individuals are also subjected to GBV, to varying degrees and in different contexts. A literature review of studies on domestic violence against men around the world documented prevalence rates of 3.4-20.3% for domestic physical violence, 7.3-37.0% for psychological violence, and 0.2-7% for sexual violence[13]. (These data on domestic violence against men are also likely to be downwardly biased, due to fear among male victims of women aggressors as being labeled ‘weak’, and to male victims of male aggressors of being depicted as ‘willing homosexual participants’[14].) In all cases, the consequences of GBV are significant and varied, going beyond immediate physical harm to include long-lasting effects on mental well-being[15,16], reproductive health[9,17], socioeconomic status[18,19], and participation in society[20,21].

GBV is determined by an array of factors that are embedded in social, economic, and cultural contexts[12,22,23]. Gender inequalities in economic security, educational opportunities, and political participation contribute significantly to GBV[20,24,25]. Limited opportunities for economic independence can increase the risk of violence within households, as individuals become financially reliant on abusive partners[26]. Sociocultural norms and patriarchal values that accept or normalize violence within relationships also contribute to perpetuating these harmful behaviors[23,27,28]. Moreover, gendered power dynamics in decision-making processes contribute to the perpetuation of GBV, often affecting women disproportionately[12,21,29]. These risk factors can intersect across various social identities (e.g., gender, race

and ethnicity, class, disability) in ways that compound vulnerabilities to GBV. For example, individuals from marginalized racial or ethnic groups may face increased vulnerability to violence as a result of both racism and sexism[30–33]. Women from low-income backgrounds may encounter heightened obstacles to leaving abusive situations due to restricted availability of resources and support services[19]. Similarly, disabled individuals may confront added difficulties in accessing protection and justice systems due to physical or communication barriers[12,34].

Climate change as a determinant of GBV

Climate change adds another dimension to the determinants of GBV by exacerbating existing vulnerabilities and stressors[35,36]. Not only does climate change worsen forms of resource scarcity that contribute to GBV; the impacts of, and adaptations to climate change may also reshape gender dynamics in ways that influence the incidence and (or) nature of GBV. In our reading of the literature, the links between climate change and GBV operate through several possible mechanisms, alone or in combination (Figure 1).

First, climate change may have physiological and psychological effects that increase the risk of interpersonal conflict, including IPV. Studies indicate a positive correlation between increasing temperatures and the occurrence of physical aggression and violence[37,38]. For example, a study conducted in Madrid, Spain found that after heat waves, rates of intimate partner femicide increased significantly, highlighting the link between extreme heat and heightened tensions within intimate relationships[39]. Similarly, two studies that examined the effects on droughts on IPV in sub-Saharan Africa found that droughts are associated with a higher risk of a woman's partner adopting controlling behaviors, such as jealousy, accusations of unfaithfulness, not permitting the woman to contact her family, and not permitting her to meet with female friends[36,40]. Additionally, climatic changes and associated environmental shocks (e.g., cyclones, floods) can generate high-stress environments (e.g., due to uncertainty or traumas after disasters) that contribute to tension and conflict within households and communities. This can exacerbate pre-existing risks of GBV and lead to new incidents of violence. Research carried out in Sri Lanka after a Tsunami in 2004 and in the Philippines after the Super Typhoon Haiyan in 2013 supports the assertion of a correlation between climate-induced stress and heightened GBV. These studies examined how men tend to vent emotional suffering through violence and alcoholism, exacerbating IPV, domestic violence, rape, and other forms of sexual violence[41].

Second, temperature and precipitation variability, as well as climate-related natural disasters, can reduce agricultural yields, lower labor productivity, and lead to other disruptions that result in economic insecurity and job loss. These climate-related income shocks may increase GBV by causing stress and conflict among partners and family members[2,18,42]. Importantly, the shocks themselves may have differential effects on women and men, with implications for gender inequalities and GBV. For example, one study conducted in Northern Bangladesh found that 64 percent of women experienced extended unemployment (i.e., for 3-12 months) after floods; men were also unemployed during and after floods, but they were unemployed for less time because they could move to find work more easily[43]. Such disparate impacts may affect the prevalence of GBV if they have uneven impacts within the household, and thus alter women's economic reliance on their partner or change the relative earnings of men and women. Some studies have highlighted how climate-induced livelihood disruptions such as rainfall shocks and heat waves diminished women's financial autonomy and economic opportunities (their empowerment), leading to increased IPV in Peru[44] and Spain[39].

Third, the impacts of changing temperatures and precipitation can influence migration patterns, including internal and international moves[45,46]. Climate exposures have been associated with both increases and decreases in out-migration[2,47]. These changes can influence GBV since increases (or decreases) in migration will, rather mechanically, increase (or decrease) the likelihood of temporary spousal separation. All else equal, such separation will reduce (or heighten) the likelihood of physical violence (although, for separated couples, emotional and psychological abuse may continue). Shocks associated with climate change (e.g., tropical cyclones, major droughts) may also lead to the unplanned displacement of populations. Women and girls are particularly vulnerable during displacement as they face challenges in finding shelter and are at a higher risk of GBV (i.e., sexual abuse in shelters and refugee centers). For

example, two studies show how displacement often hinders women's ability to maintain personal hygiene and sanitation, limiting their traditional roles at home[43,48]. According to a systematic review[49], approximately one-in-five refugee or displaced women in complex humanitarian settings experienced sexual violence. Likewise, a study conducted in Haiti to describe the GBV experiences of internally displaced adolescent girls found that the risk of being sexually abused post-earthquake increased by 41%[27]. Importantly, displaced men and boys have frequently been reported to experience higher rates of sexual violence during flight, displacement, and re-settlement in refugee camps[50–52]. While this research has generally been conducted in the context of armed conflict (or non-climate-related disasters such as earthquakes) as the cause of displacement, parallels can be drawn to climate-related displacement. One study of sexual- and gender-based violence among asylum-seekers and undocumented migrants in two European countries found that approximately one-third of all victims were male and that sexual crimes (against women and men) were committed not only by intimate partners but also by persons with institutional authority. In addition to these more immediate impacts, it is also worth noting that the process of migration can involve the transformation of gender roles depending on which household members move or remain in place[53]. Climate-related changes in the frequency and nature of migration (e.g., who moves and to where) will therefore influence these processes. The implications for GBV are not clear a priori, but will depend on how they translate into changes in women's and men's empowerment, inequalities, and similar variables.

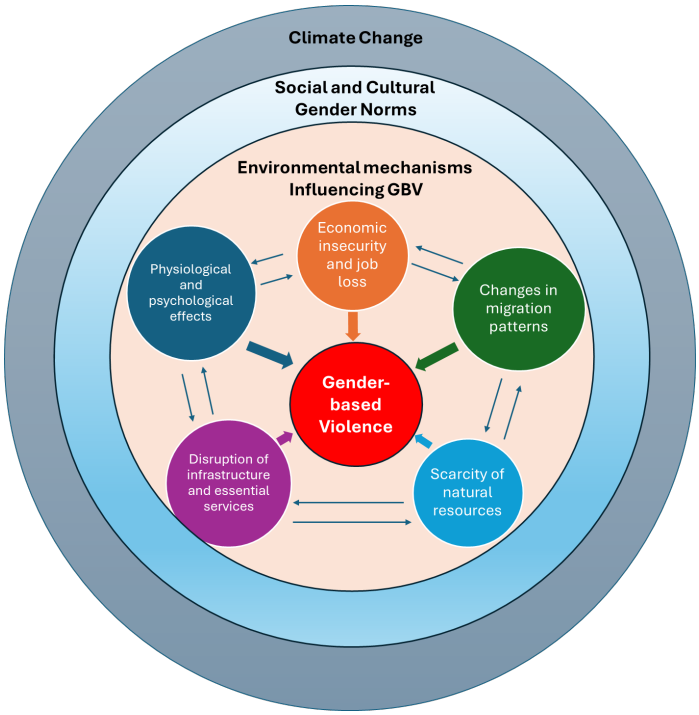

Figure 1 Conceptual framework of the links between climate variability and GBV

Fourth, rising temperatures and changing precipitation patterns will result in growing scarcity of natural resources (e.g., arable land and water) or in newly-accessible resources (e.g., as temperate zones shift to higher latitudes)[54]. Competition and conflict over such resources can increase the risk of GBV, especially in the context of organized inter-group violence that can stem from such competition[55]. In addition to causing economic and perhaps psychological stress (as discussed above), such resource scarcity can lead to GBV directly by increasing women and girls' exposure to violence during the collection of essential items (e.g., food and water), for which they are typically responsible. For example, a study conducted in India found that young girls experienced verbal harassment while walking to water sources,

resulting in a persistent atmosphere of fear[56]. Similarly, young girls in Cameroon expressed feelings of fear and anxiety because they worried about the risk of physical assault and rape when walking long distances[57]. A review of the literature on water insecurity and GBV found that the domains of water insecurity (access, adequacy, affordability, reliability, and safety) are related to the type of violence experienced; for example, several studies have documented the risk of sexual violence among girls and women while accessing water, as in the above example, while others demonstrate the risk of physical violence against women committed by their intimate partners when expectations about water collection are not met[58]. Tallman et al. (2024) developed the concept of "gender-based water violence" to capture this "slow violence" of water insecurity and its tendency to generate significant harm to health and well-being for women and girls[59].

Fifth, natural disasters associated with climate change can disrupt infrastructure and essential services, including healthcare and emergency services. These disruptions can make it more difficult for victims to access help and support that can prevent GBV or mitigate its impacts among those who become victims. Desai and Mandal (2021) and Lauve-Moon and Ferreira (2017) emphasize how climate-related disasters constrain access to support services for existing and new victims of GBV[21,60]. Additionally, research by women activists and non-governmental organizations in Nepal shows that disaster response efforts to prevent GBV and protect women face many challenges, such as lack of coordination among organizations and integration of women's voices in policymaking, inadequate training and awareness, poor provision of safe spaces for women and girls, among others[41]. Among several important implications, these disruptions could reduce the likelihood of successful interventions, thus increasing the likelihood of repeated victimization of GBV.

Importantly, pre-existing cultural and social gender norms, such as gender inequality, patriarchal attitudes, and culturally hegemonic ideas of masculinity, serve as an overarching contextual factor through which the previous five mechanisms worsen GBV in the face of climate change. Fisher (2010), Memon (2020), and Rashid & Michaud (2000) have discussed how climate change can interact with existing gender norms to increase the likelihood of GBV[28,35,61]. For example, Memon (2020) discusses how women's mobility is highly restricted in many countries, affecting their ability to find shelter or other rescue facilities due to the fear of being blamed and punished for being disobedient to their husbands, fathers, brothers, or even sons[28]. Research by Rashid and Michaud (2000) explores how socio-cultural norms about honor, shame, and purity in Bangladesh strongly influence girls' behavior[61]. They found that these gender norms and expectations were not relaxed during the floods, negatively impacting many girls who lost self-respect and shame due to their struggles to conform amidst the disruption. Gender norms are culturally specific and intersect with place-based identities like age, education, class, and marital status in ways that render some women more vulnerable to environmental stress-related GBV than others. For example, a study in a patrilocal and patriarchal community in Indonesia found that younger women in multigenerational households can be subjected to psychological violence by their in-laws when domestic water duties are not fulfilled[62]. Another study of resource insecurity-related GBV in the Bidi Bidi refugee camp of Uganda demonstrated how being a refugee, adolescent or young adult, and female contributed significantly to the risk of sexual and physical violence while collecting water and firewood[63]. Meanwhile, social norms that assume only women can be victims of sexual violence can undermine the willingness of male victims to report these crimes and exacerbate their risk of re-victimization. For example, medical care providers sometimes do not believe that men can be victims of rape, lack knowledge of appropriate mental health care for male victims of sexual violence, or implement programming for survivors in maternal care programs for women only[51].

While we have described the mechanisms linking climate and GBV individually, they may in practice operate in ways that are complex, multi-scalar (spatially and temporally), and non-independent. For instance, heat waves may increase GBV via physiological changes that cause aggression, while also increasing the risk of violence over longer stretches of time as heat-associated reductions in crop yields and water access cause stress and conflict within households and between households or communities. There might also be interactions between the mechanisms. For example, if climate change induces natural resource scarcity, women could face a greater risk of violence as they spend additional time searching for resources (such as water) and from intimate partners if resource scarcity undermines their capacity to

contribute to household income. Moreover, while our conceptual framework supports the expectation that climate change will increase the risk of GBV, it also anticipates several unexpected results. For example, climate shocks may decrease GBV by leading to spousal separation (e.g., by temporarily incentivizing the out-migration of violent men), by reducing gender disparities in income or economic status within the household (e.g., by disproportionately reducing men's income), or by incentivizing changes in migration or agriculture patterns that benefit entire families economically and (or) empower women. The potential for such counterintuitive results underscores the need for empirical studies of the links between climate change and GBV.

Evidence gaps and future research

Recent analyses have drawn needed attention to the potential links between climate variability and GBV, which has so far been understudied relative to both other demographic and health-related outcomes in the climate change literature and vis-à-vis the large literature on the links between climate change and organized violence[55]. The findings from these studies underscore the potential for climate change to affect the risk of GBV through multiple mechanisms, as detailed above. However, the empirical record is not entirely unambiguous[40], and is characterized by several conceptual and empirical limitations.

First, most of the empirical research in this area has focused on IPV, which refers to any physical, sexual, or psychological harm inflicted by a current or former partner or spouse[8,24]. These studies have yielded inconsistent results, suggesting weak or at least heterogeneous links between climate and IPV[26,39,40,64–66]. The disproportionate focus on climate effects on IPV, specifically, has led to the relative neglect of other forms of GBV, such as psychological and emotional violence perpetrated by non-intimate partners, trafficking, and forced or early marriage. These overlooked manifestations of GBV, which the evidence shows can be affected by climate change, have significant consequences for the well-being and socioeconomic status of women, girls, and gender minorities, and therefore merit greater examination. Broadening the scope of this literature to include both IPV and other forms of GBV is needed to fully understand the effects of climate change on violence and to identify the underlying mechanisms, which are likely to vary by form of violence. Such attention to GBV writ large is also needed to develop effective policies aimed at mitigating violence and advancing gender equality in the face of changing climate conditions.

Second, the existing evidence of climate effects on GBV comes from a non-representative set of contexts. Much of the quantitative research on this topic has focused on sub-Saharan Africa[23,36,40,65,67,68] and South Asia[19,26,43,48,66,69–73]. The geographic focus of the existing literature may reflect constraints on data availability, assumptions about which populations are most vulnerable to climate shocks, and similar factors. The narrow geographic scope of the existing literature limits the conclusions that can be drawn and may introduce biases. For instance, the availability of data for a given location may be correlated with a population's vulnerability to climate change and to the incidence and manifestations of GBV, leading to potential selection on the focal variables and associated biases. The geographical constraint of the existing literature is an especially notable limitation given heterogeneity in the gender contexts that shape the extent, nature, and determinants of GBV across the world. Renewed efforts to study climate-GBV links across a large and diverse set of contexts are needed to develop a more accurate understanding of where and how these impacts are occurring and to avoid selection-related biases (as has been observed in other lines of climate change research)[74].

Third and relatedly, prior quantitative studies have relied extensively on datasets designed to measure IPV (versus GBV), are cross-sectional, and include little data that can be used to identify causal mechanisms. Specifically, many studies on this topic draw on data from the Demographic and Health Survey (DHS) Program. The DHS has many important advantages for this purpose, including extensive spatial and temporal coverage, detailed information on the location of respondents, and data on IPV. However, it is characterized by several limitations that in turn constrain what is known about climate and GBV. For example, the cross-sectional design of the DHS creates the potential for biases associated with omitted variables, migration, and mortality[4]. The latter is of particular concern if the climate exposures of interest can systematically influence out-migration and mortality, which may be correlated with GBV and

introduce selection bias into the sample. These potential concerns are especially pronounced when studying the long-term or lagged effects of climate shocks, which are expected in the case of GBV. Additionally, the DHS is designed to measure a wide range of demographic and health outcomes (i.e., it is not an IPV- or GBV-specific study) over time and across many countries. While this approach has several key advantages, it also means the survey is not well-suited to measure all the constituent components of GBV or to capture the nuanced dynamics of GBV across various cultural and geographic settings. With these limitations in mind, new data collection efforts are needed to systematically collect information on GBV, more broadly defined. Ideally, these data will be collected through methodologies that capture a diverse range of environmental conditions (and thus the variation in climate exposures needed to statistically identify effects) and through a longitudinal framework (and thus help avoid many of the biases in the DHS and similar products). As noted below, such efforts to collect survey data should also be complemented by new qualitative research on climate and GBV, which is better suited to understand the mechanisms, complexities, and contingencies of this relationship.

A fourth limitation of the existing literature is a lack of attention to the causes and structural factors that contribute to GBV. Feminist scholars criticize the predominant focus on the symptoms of GBV resulting from climate change, as opposed to delving deeper into the structural and systemic causes[75,76]. Moreover, they criticize the insufficient inclusion of local knowledge, particularly women's knowledge[41]. Lastly, they argue that despite extensive research, there remains a gap in implementing gender-responsive policies and practices that effectively address climate-induced GBV on the ground[77].To address this gap, future research is needed to determine the moderating role of gender dynamics in climate-GBV links. Investigating how social, cultural, and gender norms interact with climate change events to exacerbate (or possibly mitigate) GBV can shed light on the differential vulnerability and resilience of various communities. Such investigations merit a qualitative approach, which is particularly suitable for addressing individual lived experiences, causal mechanisms, and the social processes that interact across multiple levels[78]. Indeed, it is crucial to investigate the pathways and mechanisms linking climate change and GBV to develop interventions and policies that take the specific gender dynamics of different socio-cultural settings into account.

Fifth, more attention to marginalized populations, and their potentially unique experiences, is needed. The current body of literature fails to adequately represent the perspectives and experiences of many marginalized communities[8]. For instance, in quantitative studies, findings pertaining to individuals from these different groups are often combined, an approach that assumes that the effects of climate change on GBV do not vary by group. For this reason, feminist researchers argue that there is a lack of intersectional analysis in the literature on climate change and GBV, and that the resulting one-dimensional approach fails to account for the diverse experiences of GBV across different social identities such as race, class, ethnicity, sexuality, and ability[19]. Moreover, feminist researchers have long argued that women and other victims of oppression hold unique insights into the mechanisms, dynamics, and forms of oppressive social systems[79], and that their perspectives are particularly important to uncover in order to effect change. To address this gap, future quantitative studies should collect large enough samples of the most at-risk populations and account for heterogeneity in effects and (or) processes. In other words, GBV researchers should take an intersectional approach due to the complex nature of violence and its varying effects on different individuals and communities. Quantitative researchers can do this by disaggregating and comparing findings for different groups according to gender, sex, age, race, ethnicity, marital status, and other variables hypothesized to influence the relationship between climate change and GBV. Similarly, qualitative researchers should focus on obtaining narrative data about the lived experience of climate change and violence from women from marginalized groups This approach would recognize that individuals possess multiple identities that can either exacerbate vulnerabilities or provide advantages, impacting their experiences with violence and their ability to obtain resources and support.

Finally, evaluating the effectiveness of programs and interventions aimed at addressing climate-related causes of GBV is essential for determining their impact and efficiency, and for identifying areas that need improvement. Thorough assessments can provide valuable knowledge about the most effective interventions in various situations, enabling the creation of strategies based on evidence and local

knowledge. These evaluations should cover multiple perspectives (diverse stakeholders) and facets (implementation process, outcomes, and long-term effects) on programming in order to determine the factors that contribute to their effectiveness or lack thereof. As recommended above, these evaluations should take an intersectional approach to uncover potential differences in impacts on various groups and should pay particular attention to evaluating outcomes for marginalized populations.

Addressing these gaps is important but also challenging. Research on GBV holds many ethical and methodological challenges. Ethically, it requires addressing highly personal, sensitive, and traumatic topics, usually with the very people who experienced the violence. Because the research topic is deeply personal and stigmatized, researchers must take extra care and precautions to prioritize participant safety, privacy, and well-being. Obtaining informed consent and maintaining confidentiality are crucial, as is supporting participants who disclose having experienced violence during research. Researchers should develop careful plans in advance to provide information about local services to support victims (such as psychological, emergency, and shelter service providers) when violence is uncovered during interviews[35,80,81]. Moreover, principal investigators have a responsibility to ensure that those collecting data are appropriately trained for their interactions with victims and that these field workers are from groups considered culturally appropriate for engaging with the target population. Methodologically, GBV researchers must take into account the social, cultural, economic, and environmental factors that shape the willingness of victims to disclose and describe their experiences living through, adapting to, and recovering from violence. In many areas, for instance, social norms and structures discourage people from reporting GBV experiences. This underreporting of GBV makes it difficult for researchers to identify, explore, and measure it. In the worst case, these cultural and contextual factors can introduce bias and undermine the validity of data (including the richness of qualitative data). Thus, researchers must choose data collection methods carefully to avoid, or at least minimize, these data limitations. For example, researchers should consider how to dedicate sufficient time in advance of the study procedures for building trust and rapport with participants, so that they are more willing to discuss highly sensitive topics. Highly structured methods, like surveys, often create an impersonal social dynamic between the researcher and participant and may undermine access to the most pertinent (and also most difficult to disclose) information. Researchers should seek to partner with locally trusted organizations, such as non-governmental organizations, health providers, or local government development agencies, to gain access and build trust with participating communities. Despite these challenges, ethical and rigorous research in this field is necessary to understand GBV, inform effective interventions, and advocate for survivor rights and safety policies.

Conclusion

We have briefly reviewed the mechanisms, hypothesized and demonstrated in the literature, through which climate change is or may be linked to GBV. These mechanisms include the generation of changes to physiological well-being, economic insecurity, migration patterns, scarcity of natural resources, and disruptions to infrastructure and services. These processes can work in combination with each other, and are shaped by local, gendered cultural and social norms. We have also highlighted conceptual and empirical gaps in the literature on climate change and GBV, including a lack of attention to the broader phenomenon of GBV (as compared to the more narrow phenomenon of IPV), geographical bias, the tendency to rely on findings from a rigorous but limited set of survey cross-national survey instruments, lack of attention to causes and structural factors, the need for more attention to experiences of marginalized populations, and the importance of evaluative studies on programming intended to address these issues.

A renewed research agenda on the links between climate change and GBV that addresses these gaps and otherwise expands our knowledge about the environmental dimensions of violence is needed to improve our understanding of the causes of GBV. It is also needed to develop effective interventions to prevent GBV in an era of environmental shocks and stressors. We conclude by synthesizing our specific recommendations for approaches and substantive foci for new research on the topic. First, researchers should prioritize the collection of new survey data that is specifically designed to investigate and analyze connections between climate change and GBV. These surveys should be designed to capture gendered violence as a holistic phenomenon that takes multiple forms, as understood by the concept of GBV as

opposed to the narrower focus on IPV that has been the focus of much prior work. Moreover, surveys should focus on capturing localized perceptions of climate change and on identifying perceived linkages to experiences of violence. Overall, quantitative research can produce generalizable knowledge about the links between climate change and GBV, which can be compared across geographical units to better understand the extent and the differences in form and manifestation of this violence. Second, we encourage more attention to qualitative and mixed-methods research. Qualitative approaches can reveal the underlying causes of personal experiences of violence and can explore contextual intricacies that quantitative data may fail to capture. By combining these approaches, researchers can offer a more comprehensive understanding of the psychological and social consequences of GBV caused by climate change. Finally, data collection activities should be designed and implemented in close collaboration with individuals and organizations who are trusted by the communities to be studied. Establishing trust and fostering a strong connection are crucial for collecting accurate and thorough information, particularly when dealing with sensitive topics such as GBV.

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