

The Intersection of Human Trafficking and Natural Disasters: A Scoping Review

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Abstract

Natural disasters have increased in frequency and severity in recent years. Emerging research also suggests that natural disasters increase the risk of human trafficking. This confluence of phenomena makes it critically important to better prepare communities for preventing and responding to human trafficking during and after a natural disaster. Yet, there is no available synthesis of the extant research to inform these preparations. The present scoping review aims to fill this gap by outlining the existing literature on the nexus of disasters and human trafficking. The review follows the Preferred Reporting Items of Systematic Reviews and Meta-Analysis—Scoping Review guidelines. Sources were identified through manual reference checking and in four databases: PubMed, Web of Science, APA PsychINFO, and EBSCO Discovery Service. In total, 46 sources met the inclusion criteria, that is, they focused on the nexus between human trafficking and natural disasters, demonstrated scientific rigor, and were published after 2000 and in English. Overall, the reviewed literature provided initial evidence on the association between natural disasters occurrences and increases in national and transnational human trafficking activity, understanding of the compounding vulnerabilities conducive to trafficking following disasters, and recommendations for the prevention and response to human trafficking in the wake of disasters. Future studies should evaluate prevention initiatives, including awareness campaigns and interventions that mitigate trafficking vulnerabilities. In practice, it is crucial to integrate anti-trafficking efforts into disaster relief protocols, empower vulnerable populations, and advocate for enhanced legal protections for displaced and migrant individuals.

Keywords

criminology, prostitution/sex work, cultural contexts

Natural disasters have steadily increased in frequency and severity over recent years (NOAA National Centers for Environmental Information, 2022; Summers et al., 2022; Trenberth et al., 2018). The increase in natural disasters has important implications for human trafficking, as there is a growing recognition that disasters increase trafficking risks (e.g., Centers for Disease Control and Prevention [CDC], 2020; International Organization for Migration, 2015). Human trafficking, or trafficking in persons, is the recruitment, transportation, transfer, harboring, or receipt of persons using threat, use of force, or other forms of coercion or deception for exploitation. Exploitation includes the exploitation of the prostitution of others or other forms of sexual exploitation, forced labor or services, slavery, or practices like slavery, servitude, or the removal of organs (United Nations, 2000). Among the most frequently identified risk factors that individuals experience prior to entering a trafficking situation include recent migration or relocation and unstable housing (Polaris, 2021)—two factors directly impacted by natural disasters as individuals manage the personal and socioeconomic sequelae (CDC, 2020). This results in increased vulnerability for disaster survivors, who may

engage in risky subsistence strategies, and for individuals who work in the clean-up and rebuilding effort, which creates a market for free or cheap labor in disaster-affected areas.

Extant literature has found natural disasters to also disrupt anti-trafficking efforts, as governments and communities adjust to limited resources and competing demands in reconstruction efforts (McCallum, 2020). The increase in human trafficking risk factors combined with the disruption in anti-trafficking efforts creates a particularly dangerous environment for communities already suffering from a disaster. Further exacerbating the situation, natural disasters have steadily increased in recent years. For example, between 1980 and 2021, the annual average of natural disasters in the United States was 7.4 events. In comparison, the annual average for the most recent 5 years (2017–2021) is 17.2

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events (NOAA National Centers for Environmental Information, 2022). This confluence of phenomena makes it critically important to better prepare communities for addressing trafficking during and after natural disasters. Yet, there is no available synthesis of the extant literature to inform preparation and response efforts.

We identified one previous effort to describe the existing literature on the nexus of human trafficking and natural disasters. Gurpur et al. (2021) conducted a bibliometric analysis to establish the gap in the literature and the need for additional research. Using the Scopus database of articles published between 2000 and 2020, they identified 66 publications related to human trafficking and natural disasters, about half of which were published in either the United States or the United Kingdom. The most common disciplines represented in the publications were the social sciences (33% of publications), followed by medicine (27%). There appears to be a growth in publications over time, with the peak in 2017, followed by a gradual decline. Gurpur and colleagues concluded that there was not enough research to establish a linkage between human trafficking and natural disasters.

Although Gurpur et al. (2021) provided foundational information on existing literature, there were also notable limitations. First, the search was limited to the Scopus database, which excludes gray literature. Because this is an emerging area of interest, it is plausible that rigorous empirical research is available on government reports or other documents that have not been published in peer-reviewed journals yet. The use of a single database may also result in omitted literature. Second, the analysis excludes descriptions of the types of trafficking or types of disasters that have been studied or any specific populations of focus (e.g., women, children, or climate refugees). These details are critical in setting forth a research agenda to improve the knowledge base on the intersection of human trafficking and natural disasters.

To fill this gap in the literature, we conducted a scoping review of extant literature on the intersection of human trafficking and natural disasters. The goals of this effort were to (a) synthesize existing knowledge, (b) identify existing prevention and mitigation efforts, and (c) provide recommendations for a research agenda to support the development of evidence-based practices for preparing for and responding to human trafficking and exploitation in the wake of natural disasters.

Methods

Review Protocol

This review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) standard (Tricco et al., 2018). The PRISMA-ScR checklist is shown in Supplemental Appendix I. A scoping review is an increasingly popular method for understanding and mapping the existing

literature on a specific topic or research question (Arksey & O'Malley, 2005; Pham et al., 2014). In contrast to systematic reviews and meta-analyses, scoping reviews tend to have broader research questions and afford greater flexibility to map existing research; therefore, they do not typically involve quantitative synthesis of findings across studies (Arksey & O'Malley, 2005) or quality assessments of the identified research (Armstrong et al., 2011).

A scoping review was selected for this review for several reasons. First, an initial search revealed a scarcity of evaluative studies suitable for quantitative synthesis. Second, the existing literature covered diverse topics with varied outcomes, precluding the establishment of consistent outcome measures typical in a systematic review. Third, given the limited research in this area, a scoping review provided flexibility to map existing research across different parameters more broadly, including geographic areas, disaster types, trafficking types, and focal populations. This approach also facilitated the identification of knowledge gaps, contributing to the development of a more robust research agenda.

Eligibility Criteria, Data Sources, and Search Strategy. Because human trafficking is a relatively newly defined crime with a complex set of criteria to establish its legal framework (McCallum, 2020), our objective was to review literature discussing exploitation that met the criteria for forced labor or human trafficking, as delineated by the Palermo Protocol (United Nations, 2000). We intentionally designed the search terms for this scoping review to be broad, encompassing trafficking and various forms of sexual and labor exploitation, as well as a wide range of disaster types, ensuring the inclusion of all potentially relevant articles (see Table 1). These terms were searched in four databases: PubMed, Web of Science, APA PsychINFO, and EBSCO Discovery Service on July 19, 2023. The search had no location restriction but was limited to sources published between 2000 to 2023 and in English.

Inclusion Criteria and Screening. Articles were eligible for inclusion if they specifically addressed the intersection of natural disasters and human trafficking or exploitation. Articles that focused on man-made disasters (e.g., oil spills, drinking water contamination), only on human trafficking, or only on natural disasters were excluded. Publications that were not peer reviewed were included if they met all the above eligibility criteria and were published by an organization or government agency, as a thesis or dissertation, and demonstrated scientific rigor or quality.

Titles and abstracts were first screened by one reviewer to exclude articles that did not cover the nexus of human trafficking and natural disasters. If it was not clear from the abstract and title whether the article specifically addressed the intersection of human trafficking and natural disasters (e.g., referenced climate change but not disasters or appeared indirectly related to disasters and trafficking), it was reviewed in full to assess eligibility. For articles that appeared to meet

Table 1. Search Terms.

Search Parameters		
Human trafficking, sex trafficking, labor trafficking, labor trafficking, trafficking in persons, anti-trafficking, labor exploitation, labor exploitation, commercial sexual exploitation	and	Natural disaster, disaster, hurricane, earthquake, tsunami, typhoon, flood, fire, wildfire, climate change, emergency, drought, famine, landslide, tornado

eligibility criteria, the full-text review was conducted by two reviewers. Disagreement on eligibility was resolved through discussion.

Data Charting. A standardized form was developed to extract and categorize data items and facilitate reporting and comparison across articles. To reduce potential bias and errors, two reviewers independently extracted data items for studies. Reviewers extracted the following information from the 46 eligible studies: (a) reference information (e.g., title, authors, year of publication); (b) substantive characteristics (e.g., type of trafficking, type of natural disaster, focal population); (c) methodological characteristics (e.g., research methods, recruitment methods, limitations, analysis); and (d) findings and relevant outcomes on the nexus of human trafficking and natural disasters. Details are provided in Supplemental Appendix II.

Data Synthesis. Given the depth and scope of the literature, a narrative approach was used to summarize the literature and generate directions for future research. Narrative methods can be used to synthesize both quantitative and qualitative studies (Mays et al., 2005; Snilstveit et al., 2012) allowing us to create a cohesive synthesis of the content and themes found throughout the in-scope sources. Using the extracted data from each source, two reviewers (first and second authors) conducted a thematic analysis to organize the extracted data into overarching themes. Consequently, we constructed narrative syntheses to represent all the data organized around these key themes (e.g., Thomas & Harden, 2008). The quality of the information presented in articles was used to characterize and contextualize the strengths and limitations of the recommendations and provide guidance on opportunities for additional research.

Source Characteristics. As shown in Figure 1, the search strategy yielded 78 potentially relevant sources via database searching and 22 through other sources (e.g., the author’s library). Sources were screened, reviewed, and reduced to 46 in-scope sources included in this review.

Tables 2 and 3 depict all in-scope source characteristics. Sources included in this review were predominantly international and explored a wide range of countries’ data or did not specify focal locations ($n=20$). Most sources focused on both labor and sex trafficking or exploitation ($n=17$) or solely on labor trafficking or exploitation ($n=13$) although quite a few studies discussed trafficking or exploitation in a

general sense without specifying a type ($n=9$). The majority also focused on hurricanes, typhoons, or cyclones ($n=13$), or examined a wide range of data pertaining to disasters in general ($n=13$).

In-scope sources considered a range of focal populations. In all, 17 did not specify a particular group and explored trafficking victims more generally; however, a significant emphasis was placed on children and youth ($n=13$), recognizing their vulnerability in such scenarios, and migrant workers ($n=13$).

Lastly, sources employed various methodological approaches. Literature, narrative, or legal reviews were the primary methods used to synthesize existing knowledge and legal frameworks ($n=24$), followed by archival or secondary data analysis, (e.g., analysis of epidemiological databases) ($n=13$), qualitative methods, including interviews and/or focus groups with stakeholders (e.g., NGOs) and individuals impacted by natural disasters ($n=12$), and ethnographic field research conducted in disaster-affected locations ($n=12$).

Results

The thematic analysis of the 46 sources included resulted in seven overarching themes, including the associations between disasters and trafficking activity, vulnerabilities to trafficking exacerbated by disasters, and broad recommendations for preventing and responding to trafficking in the wake of disasters. See Table 4 for a summary of the critical findings of this review.

Natural Disasters and Human Trafficking Activity

Existing evidence, both systematic and anecdotal (Bales, 2021; Boria, 2016; Curbelo, 2021; Gerrard, 2016; Gurung & Clark, 2018; Malinowski & Schulze, 2019; Tomkins et al., 2018; Worsnop, 2019), highlights the link between natural disasters and increased trafficking risks. A limited number of heterogeneous studies, utilizing data from various public archival sources like the Emergency Events Database (EM-DAT) and the Global Slavery Index, find that countries exposed to more natural disasters tend to experience higher levels of both domestic and transnational human trafficking (Bales, 2021; Boria, 2016; Cameron et al., 2021; Gurung & Clark, 2018; Tu, 2018; Worsnop, 2019).

Gurung and Clark (2018) conducted a time-series analysis of data from 158 countries between 2001 and 2011, drawing from the Human Trafficking Indicators (HTI) and

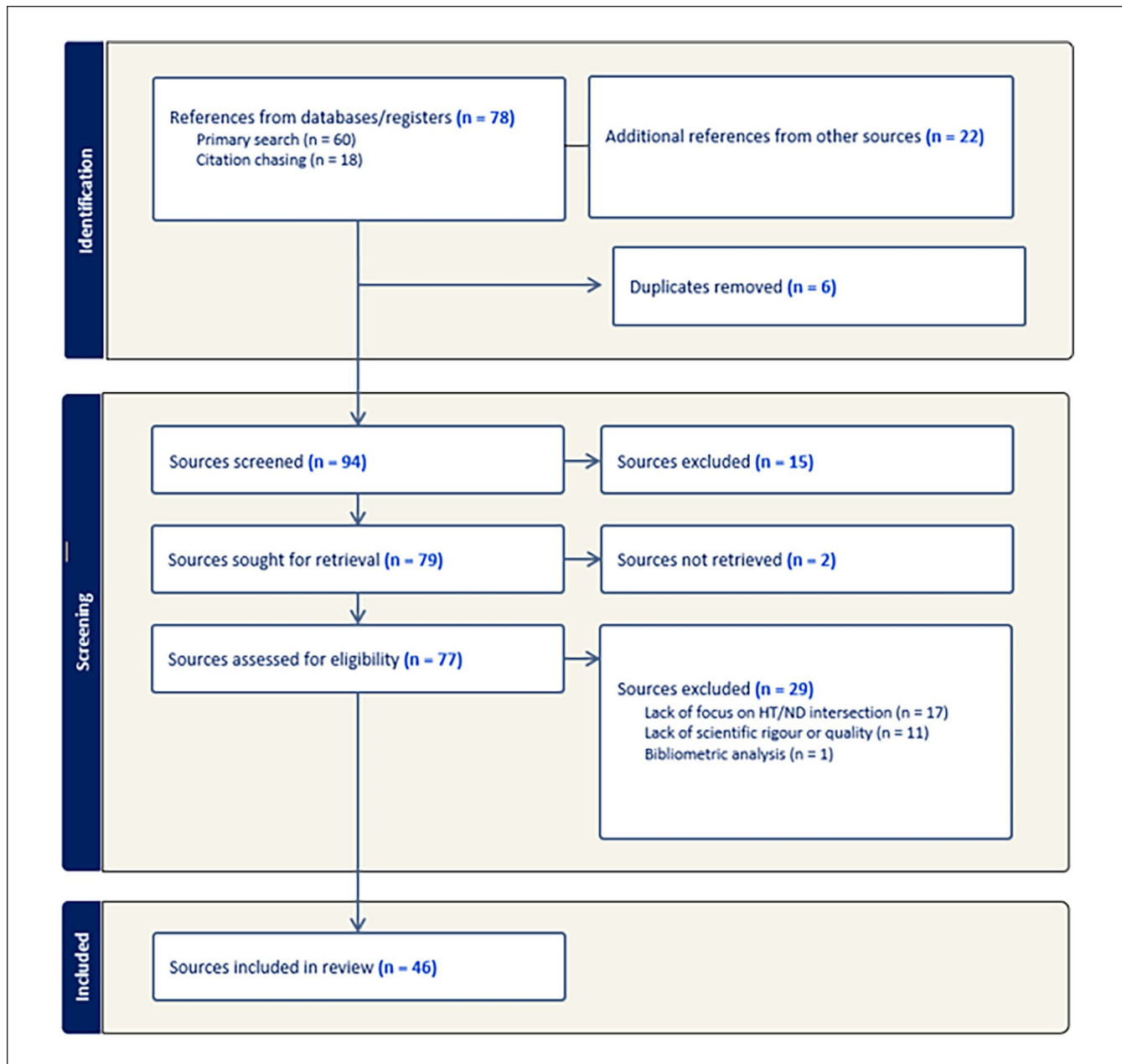


Figure 1. Preferred Reporting Items for Systematic reviews and Meta-Analysis extension.

EM-DAT, revealing a positive correlation between natural disasters and an increased likelihood of internal trafficking, particularly sex trafficking, especially in economically disadvantaged communities. The relationship between labor trafficking and disaster severity appeared less pronounced, likely due to limited markets and domestic trafficking networks (Gurung & Clark, 2018). Similarly, Boria (2016) examined data from 120 countries in 2011 and 2012, derived from the U.S. Trafficking in Persons Report and EM-DAT, finding that disasters in source countries correlated positively with trafficking outflows. The study also noted a positive correlation between disaster

intensity and a country's likelihood of becoming a source for trafficking victims, emphasizing the multifaceted relationship between natural disasters and trafficking dynamics (Boria, 2016).

Another study used data from sources like the World Health Organization, the United Nations Office on Drugs and Crime, and HTI to explore the link between disease outbreaks and human trafficking outflows (Worsnop, 2019). It found that disease outbreaks were associated with larger trafficking outflows, even after accounting for risk factors such as GDP per capita, internet access, and fertility rates (Worsnop, 2019).

Table 2. Literature Year and Country.

Characteristic	Number of Studies
Year of publication (Range)	
2005–2010	8
2011–2015	11
2016–2020	17
2020–2023	10
Country ^a	
Unspecified ^b	20
United States, unspecified	2
Louisiana	9
Gulf Coast	3
Texas	1
East Coast	1
India	3
Haiti	3
Nepal	3
Indonesia	2
Myanmar	1
Thailand	1
Bangladesh	1
Kenya	1
Rwanda	1
Philippines	1

^aSome sources had multiple locations. Will not sum to the total number of studies included.

^bSources in this category explored a wide range of countries' data or did not specify focal locations.

A few studies explored moderating factors, including the presence of war and conflict (Bales, 2021), gender inequality indicators (Cameron et al., 2021), the intensity of disasters (Boria, 2016), and government roles in post-disaster relief (Bowersox, 2018; Tu, 2018). However, these studies remain limited, vary in rigour, and have produced mixed findings. For example, Tu (2018) did not find that the Quality of Government moderated the impact of natural disasters on trafficking outflows, while another study suggested that countries with more natural disasters were more likely to meet their responsibilities under the Palermo Protocol (Bowersox, 2018). Despite variations in methodologies, these contrasting results highlight the need for further research.

Several sources discussed the proliferation of unsubstantiated human trafficking claims in post-disaster settings (Bales, 2021; Bromfield & Rotabi, 2012; Joshi et al., 2020; Montgomery, 2011; Samuels, 2015; Wooding & Petrozziello, 2013). Samuels (2015) and Montgomery (2011) investigated the phenomenon of rumors and misinformation about trafficking in disaster-affected regions, revealing that rumors of child abductions and trafficking quickly emerge after disasters. These stories are usually proven false or exaggerated but play a central role in post-disaster narratives, both among survivors and in international media coverage. Contrary to rumors of traffickers abducting children and youth in disaster-affected areas, evidence suggests that traffickers and

Table 3. Literature Characteristics.

Characteristic	Number of Studies
Type of trafficking or exploitation	
Both sex and labor	17
Labor	13
Unspecified ^a	9
Sex	6
False adoptions	2
Focal Population	
Unspecified ^b	17
Children or youth	13
Migrant workers	13
Women	7
Laborers	5
Disaster resilience workers	4
People living in emergency contexts	1
Type of Natural Disaster ^c	
Natural disasters, general ^d	12
Hurricanes, typhoons, cyclones	14
Climate change	7
Earthquakes	6
Conflict and displacement	5
Tsunamis	4
Floods	3
Droughts	2
Environmental degradation	1
Disease outbreak	1
Manmade disasters, general	1
Study Type	
Peer-reviewed article	26
Reports or white papers (government, NGOs, international organizations, etc.)	10
Thesis (graduate and undergraduate)	7
Guideline or handbook	2
Book chapter	1
Study Methods ^e	
Literature, narrative, or legal review	24
Archival or secondary data analysis	13
Qualitative (interviews and/or focus groups)	12
Ethnographic field study	12
Commentary/expert opinion	4
Survey	5
Expert meeting/summit	1

^aIncludes studies that discuss trafficking generally and do not mention a type of trafficking.

^bIncludes studies that do not specify a specific focal population or mention everyone as a focal population.

^cStudies focus on multiple types of disasters. Will not sum to the total number of studies included.

^dIncludes studies that do not specify a type of disaster or look at a wider range of disasters.

^eStudies can have multiple methods. Will not sum to the total number of studies included.

exploitative employers take advantage of the loss of homes and livelihoods to trick or coerce individuals into exploitative situations.

Table 4. Critical Findings.

Natural disasters exacerbate vulnerabilities conducive to human trafficking, including poverty, economic disparities, displacement, and disruption of law enforcement and services.
Governmental structures, including immigration systems, can inadvertently create exploitative conditions conducive to trafficking.
Community awareness and mobilization are crucial for both prevention and response efforts.
Disaster relief efforts should incorporate content on human trafficking prevention.
Evaluation of prevention initiatives is limited but crucial for guiding effective anti-trafficking efforts.
Primary research on human trafficking in post-disaster settings is limited but crucial for designing effective prevention and intervention efforts.

Vulnerabilities and Human Trafficking in Crisis Contexts

Natural disasters, climate change, conflicts, and other crises contribute to hazardous conditions that heighten the vulnerability to human trafficking (Gerrard, 2016; Global Protection Cluster, 2020; International Organization for Migration, 2015; Naik et al., 2007; Sheu et al., 2021; Tu, 2018; Williams et al., 2018). These vulnerabilities encompass several dimensions, such as the loss of homes and infrastructure (Bales, 2021; McCallum 2020), disruptions of family units and social connections (Gerrard, 2016; Joshi et al., 2020; Worsnop, 2019), inadequate access to healthcare and basic services (Joshi et al., 2020; Randolph et al., 2019), and unemployment (Boria, 2016; Dutta, 2013; Randolph et al., 2019). Of particular concern are children, who are especially at risk during and after disasters due to separations from parents, interruptions in education, and increased unsupervised time (Bromfield & Rotabi, 2012, 2012; Flâte, 2018; Randolph et al., 2019; Scarpa, 2013; Stoklosa et al., 2021; Wooding & Petrozziello, 2013). Moreover, disasters can trigger harmful coping mechanisms, including child marriage, child labor, and involvement in commercial sex work, as individuals struggle for survival amid disrupted families and lost livelihoods (Gerrard, 2016).

Disasters can exacerbate vulnerabilities across social, economic, and human security factors (Eichelberger, 2020). Multiple sources noted that disasters disproportionately affect individuals and communities already in precarious positions (Brown et al., 2021; Cameron et al., 2021; Molinari, 2017; Randolph et al., 2019; Scarpa 2013; Sheu et al., 2021; Stoklosa et al., 2021). Vulnerable communities most frequently mentioned include rural communities heavily reliant on their land for sustenance and income (Brown et al., 2021; Malinowski & Schulze, 2019; Naik et al., 2007), migrant workers (Browne-Dianis et al., 2006; Naik et al., 2007), those displaced and residing in refugee camps (Brown et al., 2021; Curbelo, 2021; Dutta, 2013; Flâte, 2018; Gerrard, 2016; IOM, 2015; Molinari, 2017; Sheu et al., 2021; Stoklosa et al., 2021; Stephens, 2019; Tu, 2018; Wooding & Petrozziello, 2013), as well as individuals marginalized due to their socioeconomic status, gender, and/or social standing (Dutta, 2013; Gyawali et al., 2017; Flâte, 2018; Molinari, 2017).

Forms of Trafficking and Exploitation

Across the literature, various forms of trafficking and exploitation were acknowledged, including forced or fraudulent adoptions, child marriage, forced labor, debt bondage, sex trafficking, sex tourism, and commercial sexual exploitation of children. Discussions about forced/fraudulent adoption, child marriage, sex trafficking, exploitation, and tourism were primarily found in the international literature (e.g., Bromfield & Rotabi, 2012; IOM, 2015; Montgomery, 2011; Naik et al., 2007; Samuels, 2015). The literature focused on the United States primarily centered on forced labor cases of foreign nationals, especially adults (e.g., Browne-Dianis et al., 2006; Hepburn & Simon, 2013; McCallum, 2020).

Decreased Enforcement and Anti-Trafficking Efforts

During disasters, the disruption to regulatory and enforcement activities creates an environment where trafficking and exploitative practices can thrive. This is due to limited enforcement capacity and compromised victim rights, stemming from infrastructure breakdowns and communication challenges (e.g., loss of offices and staff, staff trauma, and insufficient financial reserves; Delaney, 2006).

As social services are compromised, vulnerable communities risk losing access to vital support systems (Bales, 2021; Brown et al., 2021; Eichelberger, 2020; Global Protection Cluster, 2020; Gurung & Clark, 2018; International Organization for Migration, 2015; McCallum, 2020; Rosenbaum & Watson, 2006; Smukler, 2006). In addition, natural disasters can overwhelm law enforcement and emergency services, diverting their attention and resources from anti-trafficking efforts (Global Protection Cluster, 2020). This diversion provides traffickers with an opportunity to exploit the chaotic post-disaster environment with reduced scrutiny (Bales, 2021; McCallum, 2020; Randolph et al., 2019; Tomkins et al., 2018).

The role of corruption and collusion of law enforcement, humanitarian responders, and peacekeepers in post-disaster settings as a barrier to identifying and responding to human trafficking was also discussed. In some cases, peacekeepers and representatives of government were found to be directly

perpetrating exploitation (ECPAT, 2006). ECPAT (2006) described cases in which peacekeepers traded food or small amounts of money in exchange for sex with disaster survivors as young as 13. In other literature, peacekeepers and law enforcement were purported to be colluding with perpetrators indirectly by harassing victims and conducting immigration raids requested by perpetrators (Browne-Dianis et al., 2006).

Economic Disruptions and Need for Labor

Natural disasters trigger economic disruptions, creating an environment ripe for traffickers to exploit vulnerable individuals who have lost their livelihoods and are desperately seeking employment. Victims can be coerced into various forms of sex and labor exploitation, frequently without pay and sometimes in hazardous conditions (Browne-Dianis et al., 2006; Cordero-Guzman et al., 2013; Theodore, 2017; Redwood, 2009). The reduced availability of housing after disasters exacerbates existing disparities like poverty (Browne-Dianis et al., 2006; IOM, 2015; McCallum, 2020; Sheu et al., 2021). The poverty experienced by victims of disaster, a lack of food and basic amenities, education facilities, health care, employment opportunities, and means of subsistence, means that entering exploitative relationships can be a survival and coping mechanism and seen as the only way to make ends meet (Delaney, 2006; Malinowski & Schulze, 2019). For instance, the aftermath of the 2010 Haiti earthquake revealed that displaced girls and women turned to smuggling and potential trafficking (both labor and sex) out of desperation due to poverty and limited options (Wooding & Petrozziello, 2013). Several sources noted the prevalent use of false promises and fraudulent recruitment methods to entice potential victims of trafficking (Browne-Dianis et al., 2006; Dutta, 2013; Flâte, 2018; Redwood, 2009; Rosenbaum & Watson, 2006; Stahl, 2018; Tomkins et al., 2018).

Disruption of labor supply chains and high demands for low-wage workers to engage in clean-up and reconstruction work are recurring patterns in disaster-affected regions and conducive to exploitation (Brown et al., 2021; Browne-Dianis et al., 2006; Cordero-Guzman et al., 2013; Hepburn & Simon, 2013; Redwood, 2009; Sheu et al., 2021; Stahl, 2018). Examples of these were extensively discussed in sources centered on the experiences of resilience workers following Hurricanes Harvey and Katrina in the United States. Studies analyzing resilience workers' experiences post-Katrina—who were primarily migrant and undocumented—found that they endured lower wages, less frequent overtime compensation, and increased instances of wage theft and threats of deportation (Browne-Dianis et al., 2006; Fletcher et al., 2006; Theodore, 2017; Olam & Stamper, 2006; Rosenbaum & Watson, 2006; Smukler, 2006; Warren, 2014). For example, a survey of 218 resilience workers found that 47% reported not receiving all the pay they were entitled to following Katrina (Smukler, 2006). Another survey of 361 resilience

workers conducted within the first 4 weeks following Hurricane Harvey found that more than one-quarter of workers had been victims of wage theft and the total amount of unpaid wages had already exceeded \$20,000 (Theodore, 2017).

Governmental Structures and Federal Law Suspensions

Governmental structures, including immigration systems, play a pivotal role in exploitation and trafficking vulnerability. The U.S. guestworker visa program, for example, illustrates how immigration systems can inadvertently create exploitative conditions conducive to trafficking (McCallum, 2020). An analysis of resilience workers' experiences in New Orleans after Hurricane Katrina revealed cases of workers recruited from Thailand under false promises, transported on H-2A visas, and subjected to passport confiscation, threats of arrest or deportation, inadequate access to food, and hazardous living and working conditions by their employers. However, due to H-2A visa requirements, they were unable to escape their situation without risking losing their legal worker status (Browne-Dianis et al., 2006). Guestworker programs that do not permit employment movability have no path to permanent status and include no labor protections for workers can be conducive to the exploitation of migrant workers, forced labor, and conditions that qualify as human trafficking (Browne-Dianis et al., 2006).

Several sources discussed the impact that federal law suspensions had on the exploitation of migrant workers following Hurricane Katrina (Bales, 2021; McCallum, 2020; Olam & Stamper, 2006). After the hurricane, a need for reconstruction laborers resulted in an influx of migrant workers into the area; however, two hurdles that normally prevent the hiring of migrant workers were suspended: (a) the Davis-Bacon Act and (b) the requirement that employees prove that their employers are either citizens of the United States or that they are legally permitted to work in the country. With the suspension of Davis-Bacon, which requires that local prevailing wages, benefits, and overtime be paid to laborers on federal or federally funded construction, alteration, or repair projects,¹ companies no longer had an incentive to hire more costly local workers. Instead, they hired migrant workers, who were willing to work for less than the prevailing wage. This resulted in numerous cases of abusive and hazardous living and working conditions, wage theft, and exploitation (Bales, 2021; Fletcher et al., 2006; McCallum, 2020; Olam & Stamper, 2006).

Additional sources noted the conflict between U.S. immigration laws and both national and international labor standards, which contributes to the vulnerabilities experienced by undocumented migrant workers. Although U.S. immigration laws prohibit the employment of workers lacking legal status, the demand for low-wage labor after Katrina led to the

recruitment of undocumented workers for clean-up and reconstruction projects (Redwood, 2009). The Inter-American Court of Human Rights extends labor rights to all workers regardless of their immigration status. In theory, labor, health, and safety protections should apply universally but undocumented workers often receive fewer protections (Fletcher et al., 2006; Redwood, 2009). The lack of regulations in immigration laws and labor standards following Katrina perpetuated exploitation in the United States.

Prevention, Mitigation, and Response

Several broad recommendations for the prevention, mitigation, and response to human trafficking following natural disasters were gleaned from the reviewed literature.

International-Level Efforts

Defining and Standardizing Terminology. International organizations and agreements must prioritize clear and consistent definitions of human trafficking-related terms such as “abduction,” “sale,” and “trafficking” (Bromfield & Rotabi, 2012; Cameron et al., 2021; IOM, 2015; Scarpa, 2013). In a review of international definitions, Scarpa (2013) compared different interpretations of “child traffic” in the Convention on the Rights of the Child Article 35 and “child trafficking” in the UN Trafficking Protocol, noting a need to standardize definitions and suggesting a distinction between children “trafficked for the purpose of adoption” and those “trafficked through adoption for subsequent exploitation,” proposing the use of the term “child laundering” for the latter practice. This distinction aimed to eliminate confusion in cases of illegal intercountry adoptions (Scarpa, 2013). Adopting a clearer understanding of child abduction, sale, and trafficking and harmonizing definitions and interpretations within international law can serve as a solid foundation for global efforts to protect vulnerable populations.

Integration into International Agreements. International efforts to combat human trafficking following disasters should be integrated into broader agreements addressing climate change and displacement. For instance, the United Nations Framework Convention on Climate Change should incorporate provisions to address the protection and well-being of displaced individuals to prevent trafficking (Gerard, 2016).

Country-Level Efforts

Defining and Strengthening Legislation. National governments play a pivotal role in combating human trafficking within their borders. However, human trafficking is often overlooked during a crisis (IOM, 2015). Countries must enact clear and comprehensive legislation that defines exploitation and human trafficking, ensuring that these laws encompass trafficking that occurs during and after disasters (IOM, 2015). In this context, national legislation should

explicitly acknowledge the heightened vulnerability of disaster-affected populations to trafficking.

Comprehensive legislation regarding labor and workplace protections can also help reduce exploitation following disasters, particularly for migrant workers recruited for clean-up and reconstruction work. Olam and Stamper (2006) noted the action items supported by the Immigrant Justice Project in the United States following Hurricane Katrina, including the need for the government to acknowledge the magnitude of the exploitation occurring in the reconstruction effort, for state and federal agencies to aggressively enforce existing labor laws, enforce workplace protections irrespective of race, national origin, immigration status, or level of English proficiency, for the Department of Labor to audit government contractors for compliance with federal wage and hour laws, and enact temporary worker programs (Olam & Stamper, 2006).

Enhancing Legal Protections for Displaced Persons. Displaced persons often lack legal protection, making them susceptible to traffickers. Countries should prioritize legal safeguards for these individuals (Stephens, 2019). This includes establishing mechanisms for the identification of traffickers and prosecution under the law. In the United States, the Federal Emergency Management Agency (FEMA) recently changed its rules to allow undocumented people and non-citizens with Office of Refugee Resettlement certification letters or T- or U-Visa status that confirm the person is a victim of human trafficking to access disaster benefits if they were impacted by a federally declared disaster.² This policy demonstrates a small step to improve service access for a vulnerable population with the intent to prevent further harm to that person.

Addressing Root Causes for Trafficking. Some literature asserted that disasters do not necessarily cause human trafficking and exploitation; rather, they exacerbate the existing root factors leading to those forms of abuse, including poverty, economic disparities, and structural inequalities (Flåte, 2018; Sheu et al., 2021). Therefore, to prevent and mitigate human trafficking within the context of natural disasters, it is imperative that governments and systems invest in holistic, systemic, and sustainable efforts that provide resources and services to address these root causes (Bales, 2021; Brown et al., 2021; Flåte, 2018; Tu, 2018). Some sources, acknowledging the discrimination and violence against women that make them more vulnerable to trafficking, further noted the need to invest in anti-trafficking initiatives aimed at empowering women, educating society about gender equality, and implementing policies and programs that improve the status of women in society (Cameron et al., 2021; Dutta, 2013). This finding is an important departure from some narratives around human trafficking that suggest trafficking is a singular event of harm in a person's life, such as a kidnapping or a person taken against their will to be trafficked. Rather, a

person's vulnerability to trafficking increases as they experience other forms of harm or marginalization.

Local and Community-Level Efforts

Community Awareness and Mobilization. Several sources discussed the importance of creating awareness about human trafficking, both prior to disasters (e.g., through community-wide anti-trafficking efforts) and afterward (e.g., through targeted campaigns in disaster-affected areas) (Gyawali et al., 2017; Stahl, 2018; Tu, 2018). Awareness campaigns are particularly important for vulnerable populations, such as refugees, displaced people, and migrant workers, who are most at risk of falling into exploitation and trafficking schemes. Importantly, awareness interventions require knowledge of local communities, the local culture, and the location of at-risk populations for community outreach (Delaney, 2006; Jaung et al., 2017; Joshi et al., 2020; Naik et al., 2007; Randolph et al., 2019; Stoklosa et al., 2021). Local organizations and community leaders can play a critical role in raising awareness about the risks of human trafficking and educating community members on how to recognize and report potential cases.

Trafficking Prevention and Disaster-relief Efforts Must Work in Tandem. Several sources discussed the need for integrated approaches that combine disaster relief efforts with trafficking prevention strategies. Disaster relief efforts should be adapted to include content on human trafficking prevention (Dutta, 2013; Stahl, 2018; Worsnop, 2019). One author noted that FEMA has recommended various resources and toolkits on business continuity following a natural disaster; however, none of these resources address the potential exploitation that could befall employees after a crisis (Stahl, 2018). Government agencies and NGOs should collaborate to adapt existing resources or create new resources and toolkits that address both the immediate needs of disaster survivors and content on the risk of labor exploitation, human trafficking warning signs, identification, and response procedures in the post-disaster environment. These efforts should be based on trauma-informed care and include the coordination of support services to best assist victims of exploitation and trafficking (Global Protection Cluster, 2006).

Discussion of the Synthesized Literature

This systematic scoping review synthesized current knowledge and identified research gaps on the nexus between human trafficking and natural disasters. The acknowledged understanding within the literature is that natural disasters do not cause human trafficking, rather they exacerbate the vulnerabilities that are conducive to trafficking. These vulnerabilities include poverty, economic disparities, loss of

livelihood, displacement, disruption of law enforcement, services, and regulatory systems, compounded by an increased need for cheap labor for cleanup and reconstruction purposes. The diverse primary prevention, mitigation, and response approaches outlined, such as standardization in legal definitions, community anti-trafficking awareness campaigns, and enhanced legal protections for displaced persons and migrant workers, warrant further exploration and evaluation. See Table 5 for a summary of implications for research, practice, and policy included in this review.

Research Gaps

Despite these observed associations between natural disasters and human trafficking reviewed here, there remains a lack of research regarding their intersection, causal relationships, and potential moderating factors (e.g., Curbelo, 2021; Goto, 2012; Scarpa, 2013; Stephens, 2019). The lack of research can be attributed, in part, to the absence of uniformity in reporting and recording trafficking cases on an international scale. For example, in discussing the use of the Global Slavery Index as an indicator of modern slavery, Cameron et al. (2021) noted the challenges with inconsistencies in reporting procedures, varying definitions of trafficking crimes, and the absence of standardized data collection across countries. Databases that do not differentiate between types of human trafficking as well as domestic and transnational victims, further limit the ability to conclude the relationship between disasters and specific trafficking and exploitation activities.

Our review elucidated relevant literature from related fields (e.g., migrant workers' rights work) meaning that there is documented anti-trafficking work under different framing. In fact, service providers and responders are not always (a) aware of the definition and scope of the term "human trafficking" and (b) may serve people who have experienced a broad spectrum of experiences that includes human trafficking (e.g., sex workers, laborers, immigrants, gender-based violence victims; McCallum, 2020). Given these conditions, some experts in the field have recognized that effective anti-trafficking efforts, especially in post-disaster contexts, may be conducted by responders addressing human rights violations parallel to human trafficking, such as labor abuse or social justice (McCallum, 2020; Wooding & Petrozziello, 2013). This is an important distinction that demonstrates a potential gap in the broader understanding of anti-trafficking work within the literature. Without explicit self-identification as anti-trafficking professionals, their expertise and experiences may not be represented.

In addition, there was a limited amount of research in which primary data were collected. In the current context of widespread misinformation, researchers can prevent ineffective policies or responses by communicating authoritative and rigorous findings. In all, 37 of the 46 included sources

Table 5. Summary of Implications for Research, Practice, and Policy.

<p>Future research should focus on establishing causal relationships between natural disasters and human trafficking and identify potential moderating factors. This could involve longitudinal studies and in-depth analyses of specific disaster contexts.</p> <p>More primary data studies are needed to complement existing literature reviews and secondary research. Researchers should explore innovative and ethical ways to conduct research in disaster-impacted areas.</p> <p>Efforts should be made to standardize data collection on human trafficking across countries and regions, ensuring consistent definitions and reporting procedures. This can enhance the comparability of findings and facilitate a better understanding of the phenomenon.</p> <p>Encourage collaboration between researchers from various disciplines, including public health, humanitarian response, and human rights, to gain a more holistic understanding of human trafficking in disaster contexts.</p> <p>Research should examine the rights of migrant workers in disaster-affected regions and evaluate the effectiveness of legal protections in preventing exploitation.</p> <p>Comprehensive assessments of prevention initiatives, including awareness campaigns and efforts to address root causes, are essential. Researchers should evaluate the implementation, impact, and effectiveness of these interventions in reducing vulnerabilities and preventing trafficking.</p> <p>Disaster relief efforts should be adapted to include content on human trafficking prevention and response, integrating anti-trafficking strategies into humanitarian response plans.</p> <p>Promote holistic, systemic, and sustainable efforts that address root causes of trafficking, such as poverty and economic disparities, through initiatives like land reform, education, and healthcare.</p> <p>Advocate for enhanced legal protections for displaced persons, undocumented individuals, and ensure that immigration systems do not inadvertently create exploitative conditions.</p>

primarily relied on literature reviews or secondary research rather than primary data studies. Researchers interested in conducting studies in disaster-impacted contexts may learn from research methods utilized by related fields such as public health and humanitarian response. While there are clear challenges and ethical concerns conducting in primary research in disaster settings, lessons from the field have been documented and can guide future researchers (e.g., Guha-Sapir & Scales, 2020). Moreover, some in-scope sources analyzed data within specific time frames (e.g., Gurung and Clark's analysis of data from 2001 to 2011). The temporal scope and the potential for changes in trafficking patterns limit our understanding of the relationship between disasters and trafficking over time.

Despite widespread acknowledgment of the need for prevention work, including initiatives such as awareness campaigns and holistic approaches that address the root causes of trafficking, the existing literature offers limited evaluation of these critical interventions. To advance our understanding and guide effective anti-trafficking efforts in the context of natural disasters, future research endeavors should be dedicated to the assessment of these prevention initiatives. This assessment should encompass their implementation, impact, and effectiveness in reducing vulnerabilities, safeguarding at-risk populations, and ultimately preventing human trafficking in the aftermath of disasters. Such research will not only enhance our knowledge but also provide valuable insights for policymakers, practitioners, and organizations striving to protect vulnerable communities from exploitation during times of crisis.

Studies and other documents included in this review had very high variability in terms of design, rigor, and/or specificity. Handbooks and guides aiming to provide readily accessible materials for practitioners were few. We found

two international documents that serve as practical resources for responders and organizations working in disaster-affected areas. "An Introductory Guide to Anti-Trafficking Action in Internal Displacement Contexts" by the Global Protection Cluster (2020) and "Protecting Children from Sexual Exploitation and Sexual Violence in Disaster and Emergency Situations: A Guide for Local and Community-Based Organizations" by ECPAT International (Delaney, 2006) offer actionable guidance on how to address human trafficking in the specific context of disaster and displacement.

Key Directions for Future Research

Primary Research. Prioritize field-based assessments and the collection of primary data from key stakeholders. This includes engaging with disaster survivors, victims of trafficking and exploitation, and response personnel who are at the front lines of trafficking and disaster response. Primary research offers a necessary rich understanding of the conditions of trafficking post-disasters and allows a more in-depth assessment of the variations in experiences between vulnerable groups.

Localized Research. Many sources included in this review explored a wide range of countries' data, through analyzing cross-country archival data, or did not specify focal locations or populations. While such research provides a broad understanding of how natural disasters impact human trafficking activity, more localized and context-specific research is needed. Geographic disparities, varying levels of resources, and distinct sociocultural contexts significantly influence how natural disasters intersect with human trafficking. Enhancing

the understanding of specific countries, states, and communities' experiences with human trafficking post-disasters can provide the knowledge needed to drive policy recommendations finely tuned to local needs.

Focus on Specific Trafficking Activity. While numerous forms of trafficking and exploitation were named across the sources reviewed, including child marriage, debt bondage, sex tourism, and commercial sexual exploitation of children, there is a noticeable gap in our understanding of how natural disasters impact these specific trafficking activities. While this scoping review has provided insights into the broader intersection of natural disasters and human trafficking, future research is needed to delve deeper into these specific forms of exploitation.

Nuanced Governmental Roles. There is a need to investigate the nuanced roles of systems and governments in disaster response and their impact on trafficking. Research should delve into specific policies and practices that influence trafficking and exploitation dynamics in post-disaster scenarios.

Evaluation of Interventions. Across the sources reviewed here, there were no evaluations of trafficking prevention efforts following disasters. Identifying best practices and evaluating the impact of awareness campaigns, legal reforms, and support services can guide evidence-based policies.

Intersectional Vulnerabilities. Examining the intersectionality of vulnerabilities during disasters is crucial. Understanding how factors such as gender, socioeconomic status, and immigration status interact to heighten trafficking risks can inform targeted prevention and intervention strategies.

Standardization in Trafficking Reporting. Efforts should be made to enhance data collection and reporting mechanisms related to human trafficking in disaster-affected regions. Collaboration between governments, international organizations, and non-governmental entities can help establish standardized protocols for recording and reporting trafficking cases. This collaborative approach would facilitate the accumulation of high-quality data, enabling researchers to conduct more robust analyses and draw more conclusive findings.

Long-Term Impact. Research on the long-term consequences of trafficking following disasters remains limited. Exploring survivor experiences, recovery trajectories, and reintegration challenges can provide valuable insights into the lasting effects of post-disaster trafficking and response.

Comparative Analyses. Comparative studies that analyze trafficking dynamics across different types of disasters can help

distinguish unique challenges and opportunities for intervention. Moreover, it is essential to consider the nuances associated with specific locations and countries. The impact of natural disasters is not uniform, and variations in resources, resilience, and response capabilities exist across different regions. Future research should incorporate a comparative lens that explicitly considers the diverse socioeconomic and infrastructural contexts of different locations. A comparative analysis across countries and states with distinct levels of resources can elucidate how disparities in preparedness, response mechanisms, and recovery strategies may contribute to divergent trafficking dynamics in the aftermath of disasters.

Implications for Policy and Practice

In addition to addressing immediate response needs, recommendations for the prevention, mitigation, and systematic response to human trafficking following natural disasters cantered on the need for policy initiatives to focus on enhancing international and national legislation, ensuring standardized definitions and reporting procedures, and collaborating between governments, international organizations, and non-governmental entities to establish protocols for recording and reporting trafficking cases in disaster-affected regions. Policies should aim at improving legal protections for displaced persons, undocumented individuals, and workers, and ensuring that immigration systems do not inadvertently create exploitative conditions. Our findings underscore the necessity for comprehensive policies that tackle the root causes of human trafficking and integrate anti-trafficking strategies into humanitarian response to enhance the overall effectiveness of disaster relief efforts.

Limitations

Some limitations of this review should be considered. First, because this was a scoping review, we did not evaluate the quality of the underlying research. While these sources contributed valuable insights into the topic, variations in research methodologies, data collection, and analytical approaches may introduce potential biases or limitations that were not rigorously evaluated in this review. This diversity poses challenges in generalizing conclusions across the literature. In addition, the varied use of data sources, including self-reporting, official records, or case studies, adds complexity to assessing the reliability and validity of reported associations between natural disasters and human trafficking. The geographic and cultural diversity represented in the studies further limits the generalizability of results. Second, despite conducting extensive searches of potentially relevant databases, we cannot guarantee all relevant studies were included. Gray literature can be difficult to locate even with systematic searches. Third, while in-scope sources included data and

literature from a wide range of geographical regions (i.e., North America, Southeast Asia, Africa), we were limited to include studies published in English only. There may be studies in languages not included here that offer important perspectives and findings on the impact of natural disasters on human trafficking in their respective regions.

Conclusion

This scoping review yielded several critical findings on the intersection of human trafficking and natural disasters. The evidence gleaned from 46 sources underscores the complex dynamics surrounding this issue. Natural disasters exacerbate vulnerabilities conducive to human trafficking. These vulnerabilities span from economic and social disparities to displacement, often in the absence of effective law enforcement and essential services. Trafficking and exploitation risks are further compounded by an increased need for cheap labor and ineffective governmental structures to protect the vulnerable. Recommendations spanned from improved national and international legislation, protections for the displaced and migrant workers, community-based anti-trafficking awareness campaigns, adding trafficking prevention content to disaster relief protocols, and systemic initiatives to mitigate social and economic disparities. At the same time, it becomes apparent that there is a dearth of evaluation of prevention initiatives and primary research on human trafficking in post-disaster settings. These gaps underscore the necessity for further research and evidence-based strategies to guide effective anti-trafficking efforts. Findings from this review underscore the urgency of ongoing and future work to protect the most vulnerable during times of crisis.




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Supplemental Material

Supplemental material for this article is available online.

Notes

1. H.R. 472—99th Congress: Davis-Bacon Reform Act of 1985.
2. Qualifying for FEMA Disaster Assistance: Citizenship and Immigration Status Requirements | FEMA.gov.

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