

Human Trafficking and Environmental Crimes: Corruption and Transnational Governance Failures

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Abstract

Environmental crimes and human trafficking form a twin crisis threatening the global community. These crimes are deeply interwoven, with each accelerating the growth of the other, while gender dynamics permeate the entire nexus. At the center of these illegal transactions is corruption, serving as the primary facilitator. Gross transnational governance failures further drive the staggering growth of human trafficking and environmental degradation. This chapter explores this complex intersection and proposes gendered policy solutions that treat corruption as a root cause and address these twin crimes in tandem rather than in silos.

Introduction

The global community faces a double threat from two deeply connected crimes: environmental destruction and human trafficking. First, there is undeniable evidence that climate change and environment degradation are quickly destroying natural resources throughout the world. The source of this damage comes from many avenues, including environmental crimes, which are generally recognized as illegal activities that benefit individuals or groups at the expense of the environment. Further, it is widely acknowledged that these illicit activities are often facilitated by corrupt practices. Second, human trafficking is the fastest growing criminal industry in prevalence globally and is expected to overtake drug trafficking to become the largest global criminal industry in less than a decade (Ngwe and Elechi, 2012). Trafficking victims face gross human rights violations, including forced labor in environmentally damaging industries. Although human trafficking is illegal almost everywhere, it persists in every region. Corruption acts as a key institutional facilitator that enables human trafficking to persist and expand globally. Interwoven throughout these crimes is the issue of gender, as women and girls are disproportionately trafficked and disparately impacted by environmental damage.

To understand the systemic breakdowns in anti-trafficking and environmental governance, this study adopts root cause analysis framework. As Wagner (2014) discusses, root cause theory is a general methodology that provides a conceptual framework to understand causes and their specific role in creating a negative outcome or event. The primary purpose of a root cause analysis is to identify the cause of an undesirable outcome; the cause being defined as the source that initiates a process or creates the conditions that give rise to the negative event (Wagner, 2014). In the context of environmental crimes and human trafficking, it is argued that corruption serves as a root cause of these crimes and exacerbates the shortcomings of policies aimed to counter them. Thus, any policy designed to combat trafficking or environmental crimes must be gendered, address the interconnectedness of these crimes, and incorporate anti-corruption measures. Root cause theory suggests that successfully mitigating these destructive outcomes requires addressing their underlying drivers, particularly corruption.

The Crime of Human Trafficking

The United Nations (2000) defines human trafficking or 'trafficking in persons' as:

"...the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation".

While human trafficking victims are exploited in numerous different ways, researchers generally categorize the type of exploitation as either sex trafficking or labor trafficking. Sex trafficking includes such atrocities as forced prostitution, pornography, exotic dancing, mail-order brides, stripping, and/or marriage (Deshpande and Nour, 2013) and labor trafficking which includes domestic servitude and forced and/or bonded labor in agricultural, mining, hospitality, fishing, logging, manufacturing, and construction industries, among others such as forced child begging and pickpocketing (International Labour Organization (ILO), 2022). Notably, the ILO (2024) estimates the global annual profits from trafficked labor alone to be \$236 billion, which represents a 37 percent increase from its 2014 estimate.

Human trafficking is often referred to as 'modern slavery' and in 2021, the ILO (2022) estimated that 50 million people were living in situations of modern slavery, which is an increase of ten million more people from their 2016 estimate. The crime is not restricted to specific regions of the world, rather victims of human trafficking have been identified in essentially every corner of the globe. Every country in the world is affected by human trafficking, either as a country of origin (source country for trafficking victims), a destination country (a country in which trafficking victims are exploited), or as a transit country (a country in which trafficked victims are transported across) (UNODC, n.d.). Consequently, human trafficking is a global issue.

It is widely acknowledged that women and children, especially girls, are the overwhelming majority of trafficking victims. Specifically, the UNODC (2020) reported that, in 2018, for every ten globally identified human trafficking victims, approximately five were women and two were girls. Researchers have attributed the disproportionate victimization to the marginalized positions that women and girls hold in many societies (UNODC, 2020; Watson and Silkstone, 2006; Cho, 2015; Jac-Kucharski, 2012; Bell and Banks, 2018; Piper, 2005; Bastia, 2006;

Sanghera, 2017). In short, vulnerabilities are the fundamental reason that an individual falls victim to human trafficking. These vulnerabilities can take many forms such as the lack of economic resources or opportunities, poverty, poor and/or unstable living or housing conditions, abusive and/or violent relationships, regional political instability and/or conflict, poor mental health, recent migration or relocation, among others. As Stickle et al. (2020) describe, there are specific factors that make an individual and a global region more vulnerable to trafficking; however, often these different types of vulnerabilities are interrelated. Globally, victims of human trafficking tend to be from marginalized groups who have long endured discriminatory practices that block equal access to education, healthcare, economic and social opportunities, and legal rights. Given the significantly greater percentage of women and girls victimized by the crime, human trafficking is often referred to as a gender-based crime of violence (Watson and Silkstone, 2006; Cho, 2015; Bastia, 2006; Russell, 2014; Burke et al., 2020). Nonetheless, it is relevant to note from a policy perspective that simply being a woman or child, especially a girl, does not create the vulnerable condition, rather it is the discriminatory practices placing them in marginalized groups that prevent them from functioning equally in society.

In essentially every region of the globe, the gross violations of human rights that are part and parcel to human trafficking are recognized as illegal acts, nonetheless, human trafficking continues thrive throughout the world. The source of its growth is multifaceted; however, the root cause of the facilitation of the crime is corruption. As the UNODC (2023) states, corruption “...facilitates, fuels, and fosters human trafficking” and has been found “...in every step of the human trafficking process and in every form of the crime.” By enabling bribes to police officers, consulates, labor inspectors, recruitment agents, immigration officers, airport and border guards, judges, politicians, and money launderers, among others, corruption serves as the transactional grease that permits traffickers to profit from the exploitation of their victims (UNODC, 2023; Kendall, 2011). As Waziri-Azi (2024, pg. 34) states, “...(corruption) is said to allow the crime (human trafficking) to be invisible, facilitate the impunity of offenders and the crime...” Corrupt practices also enable those in law enforcement to actively participate in, and profit from, the exploitation of trafficked victims (Hill, 2018).

Thus, human trafficking – facilitated by systemic corruption – constitutes an expanding global crisis that disproportionately affects women and girls; nevertheless, a binding and enforceable international framework to counter it remains absent. The first and only international commitment to combat the crime is the United Nations General Assembly’s Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children (Protocol), which was adopted in December of 2000. The Protocol established the first common international definition of trafficking in persons (provided above) and identified three pillars, or the “3Ps” in the fight against human trafficking: *prevention* of human trafficking, *protection* of human trafficking victims, and the *prosecution* of human traffickers. The prevention pillar calls for ratifying bodies to endeavor to create information and mass media campaigns and social and economic initiatives to prevent trafficking in persons as well as establish policies and programs, including cooperation with nongovernmental organizations, to strengthen measures that alleviate the factors that make persons, especially women and children vulnerable to trafficking (United Nations, 2000). This pillar also calls for ratifying bodies to strengthen legislative or other measures that discourage the demand that leads to trafficking and the exploitation of persons (United Nations, 2000). The protection pillar calls for ratifying bodies to protect the identity of trafficked persons, to provide trafficked person with relevant information of court and administrative proceedings and assistance at appropriate stages of the criminal proceedings, in addition to implementing measures to provide for the physical, psychological, and social recovery of trafficked persons (United Nations, 2000). In regard to prosecution, the Protocol also explicitly states that each ratifying body shall adopt the legislative measures necessary to criminalize the offenses described in the definition of human trafficking in addition to those persons who attempt to commit any of these offenses, participate in trafficking as an accomplice, or organize or direct other persons to commit any of these offenses (United Nations, 2000).

To date, the Protocol has been ratified by 180 countries; however, the ability of the U.N. to enforce the initiatives outlined in the Protocol is severely limited (Hernandez and Rudolph, 2015). State parties that ratify the Protocol are not legally bound to adopt its anti-trafficking measures, nor is there an enforcement process or a monitoring mechanism (Segrave, 2009; Van Dijk and Klerx-Van Mierlo, 2014). As Seagrave (2009, pg.77) succinctly states, “...the protocol established a significant yet *largely symbolic* framework that provides an internationally agreed upon agenda for responding to this issue...” (emphasis added). Cho (2015) describes that in many countries there is a policy gap between the adoption of anti-trafficking policies and the actual implementation of those policies and notes that policies must focus on the actual implementation of written law to successfully achieve the anti-trafficking initiatives outlined in the Protocol. Unfortunately, this focus on policy implementation appears to be limited as only a few countries have undertaken serious and sustained anti-trafficking efforts after ratifying the Protocol (Van Dijk and Klerx-Van Mierlo, 2014). Compounding this issue is the significant cost of the many of the Protocol’s initiatives, especially those in the prosecution pillar (Cho and Vadlamannati, 2012), which can create barriers for compliance even if there is the political will to act.

Further, as Konrad et al. (2017) describe, identifying human trafficking victims and prosecuting traffickers demands a strong system of coordination and collaboration across multiple agencies both within country and across countries. Coordination and collaboration across multiple agencies, both domestic and foreign, presents numerous challenges; however, in the case of human trafficking, these challenges are exacerbated by the term ‘trafficking’ meaning different things across agencies. As previously stated, the U.N. established the definition of

trafficking in persons in the Protocol; nonetheless as Allain (2014) discusses, the Protocol also allows each state party to determine what constitutes trafficking in persons within the context of their own national jurisdiction. As a result, these jurisdictions are often not aligned as 'trafficking' means different things across countries (Allain, 2014). As Allain (2014) describes, because what is deemed 'trafficking' differs across countries, the ability of countries to coordinate on efforts such as the extradition of a trafficker are not possible given that extradition treaties often require crimes to be common to both jurisdictions. Allain (2014, pg. 113) concisely states, "...legislators around the world have created, under the banner of 'trafficking,' an international regime which, through its implementation in the domestic sphere, has fractured its potential effectiveness."

The inability of the U.N. to enforce the anti-trafficking policies outlined in the Protocol, the high cost of implementing the policies, the challenges of coordinating efforts across multiple agencies, in addition to the lack of reliable human trafficking data and corruption that plagues many countries' legal systems are likely to have all contributed to the notably low number of identified human trafficking victims and the exceptionally low conviction rates of traffickers. In reference to trafficking victims, Konrad et al. (2017) state that less than one percent of the total estimated number of human trafficking victims have been identified. In terms of the traffickers themselves, several researchers such as Van Dijk and Klerx-Van Mierlo (2014) and Kangaspunta (2015) describe the markedly low conviction rates for traffickers, which Bell and Banks (2018) state can be attributed, at least in part, on the historical focus of anti-trafficking policies on trafficked women rather than traffickers. In the United States alone, in 2022, only 1,118 persons were convicted of human trafficking, which is an increase from the 578 persons convicted in 2012, but still a conviction rate that is likely wholly below the actual crime rate (Bureau of Justice Statistics, 2024).

Environmental Degradation, Environmental Migrants and Human Trafficking

Compounding these challenges is the need for coordination and collaboration across multiple agencies both within and across countries regarding the treatment and legal rights of environmental migrants. The term environmental migration refers to those persons forced to migrate as a result of climate change disasters or environmental degradation and there is resounding evidence that environmental migrants are highly susceptible to human trafficking (Nagy et al., 2023; Hoogesteyn et al., 2024; Gerrard, 2017; Mullally and Barry, 2024; Gezie et al., 2021; Bales and Sovacool, 2021; Molinari, 2017; Phon and Price, 2024; Hill, 2018; Sylwester, 2014; Bharadwaj et al., 2022; Decker Sparks and Hasche, 2019; Jackson, 2023; Tomkins et al., 2018; Sparks et al., 2021; Yousaf, 2018). Recent research in environmental migration has highlighted the differing negative effects that occur due to 'sudden onset' disasters versus 'slow onset' disasters and need for policies and laws to account for these differences to address migrants' vulnerabilities to human trafficking (Mullally and Barry, 2024; Bharadwaj et al., 2022; and Jackson, 2023).

Sudden onset disasters such as cyclones, tornadoes, earthquakes, storms, floods, and hailstorms tend to occur rapidly and are limited in geographical scope; yet they can instantly destroy crops, cultivable land, and property and plunge those without safety nets into dire situations (Yamori and Goltz, 2021; Hill, 2018; Mullally and Barry, 2024; Bharadwaj et al., 2022; Jackson, 2023). As Hoogesteyn et al. (2024) describe, these disasters trigger a series of losses and disruptions of services; economic loss, lack of access to healthcare, education, food, shelter, and basic services and often the fragmentation of the family unit. For those in these dire, unstable situations, migration can be the only viable option in the search for new economic opportunities (Bharadwaj et al., 2022). Having lost their homes, livelihoods, and basic services, these migrants are highly susceptible to traffickers who see these vulnerabilities as an opportunity to trick or coerce migrants into exploitative situations (Hoogesteyn et al., 2024).

Slow onset, or gradual onset environmental disasters such as droughts, salinization, sea level rise, and desertification unfold over periods of months and years (Yamori and Goltz, 2021). Unlike sudden onset disasters that can be more difficult to predict and prepare for, there are early warning signs for slow onset disasters that provide a greater opportunity for policymakers to create adaptation measures, develop policies to counter the ongoing destruction, and to seek international cooperation. Nonetheless, if left unchecked, slow onset disasters directly destroy natural resource-based livelihoods such as agriculture, livestock, and fishery and are associated with prolonged negative impacts to communities (Mullally and Barry, 2024; Bharadwaj et al., 2022; Jackson, 2023). As Bharadwaj et al. (2022) describe, slow onset disasters compromise the ability of those affected to earn a living and create the motivation to migrate in search for better economic opportunities, which in turn increases human trafficking.

Thus, sudden onset and slow onset disasters both drive environmental migration and lead to increases in trafficking as environmental migrants face numerous vulnerabilities related to their displacement such as lack of adequate shelter, food, economic provisions, and healthcare. Compounding these vulnerabilities is the lack of regular migration status and legal protections, which create a multitude of legal and practical barriers (Mullally and Barry, 2024). Although the outcome from sudden and slow onset disasters are similar, it is important to note from a policy perspective that there is a difference in the speed of the migration decision, which arguably affects the level of preparedness and vulnerability of those forced to migrate. This suggests that different policies are needed for these different types of disasters; specifically, policies addressing sudden onset disasters need to account for the likelihood that environmental migrants are likely unprepared for their migration and exceedingly vulnerable.

Nonetheless, researchers have consistently noted that policies that do exist across the globe are largely ineffective in addressing the vulnerabilities of environmental migrants, which only serves to increase their trafficking risk (Piper, 2005; Martin, 2017; Yousaf, 2018; Latham-Sprinkle, 2019; Mullally and Barry, 2024; Molinari, 2017; Bharadwaj et al., 2022). As Martin (2017) describes, the immigration policies of most destination countries typically require migrants to fill job vacancies or to reunite with family members and are not designed to receive large numbers of environmental migrants who do not meet these conditions. Yousaf (2018) specifically notes that global humanitarian interventions have been ineffective in meeting the long-term needs of refugees, which has led to their unsuccessful reintegration into society and exacerbated their vulnerabilities. In reference to Pakistani migrants, Yousaf (2018) describes the disconnect between current policies and the reality of situations on the ground that do little to remedy the insecurity of these migrants. Further, Yousaf (2018) notes that governments and policy makers have historically viewed involuntary migration as a threat to national securities and have designed policies that increase border control and restrict migration policies, which does nothing to counter the vulnerabilities faced by those forced to migrate. As Yousaf (2018, pg. 210) states, “(a)lthough policies tend to treat different forms of migration and trafficking differently, people caught in the interlocking oppressions are not set apart.”

Researchers studying the intersection of environmental degradation and trafficking have called for immigration policies to address the vulnerabilities of migrants to trafficking as Piper (2005, pg. 16) succinctly states, “...trafficking in humans cannot be divorced from the issue of broader cross-border migration patterns and policies...”. In reference to climate change and involuntary migration policies, Latham-Sprinkle et al. (2019) highlight the need for risk prevention strategies, which are multidisciplinary in nature and are interlinked with the associated global risks. Regarding forced migration, Yousaf (2018) discusses the value of a human-centered approach of human security that focuses on the protection of human beings from internal and external threats and calamities across geographical boundaries, thus representing a policy shift away from viewing migration as a security threat and toward the protection of human life and dignity.

In summary, while both sudden and slow onset disasters lead to environmental migration and increase the risk of trafficking, current legal and policy frameworks are inadequate and misaligned with the lived experiences of environmental migrants. Coordinated, human-centered approaches that recognize the drivers of involuntary migration and prioritize migrant protection over border security are required to safeguard migrants and reduce their trafficking risk. Underlying this policy failure is corruption itself. Notably, corrupt authorities who are responsible for managing, safeguarding, or repatriating environmentally displaced people exploit their precarious situation through extortion. Ultimately, even well-conceived protection measures are subverted by the same corrupt mechanisms that enable human trafficking and environmental crime within this broader nexus (OHirsi, 2026). Addressing this intersection necessitates a paradigm shift toward rights-based migration governance that incorporates anti-corruption measures.

The Role of Gender in Environmental Degradation and Human Trafficking

Critical in this policy design is the need to recognize that women and girls tend to be disproportionately negatively affected by climate change disasters, whether sudden or slow onset (Gerrard, 2017; Mullally and Barry, 2024; Molinari, 2017; Bharadwaj et al., 2022). Corruption directly compounds this disproportionate burden, as irregularly status female migrants displaced by climate disasters are particularly vulnerable to sextortion, a gendered form of corruption where officials demand sex acts in exchange for documentation, aid, or safe passage (Caarten et al., 2022; Sundström & Wängnerud, 2021). As Molinari (2017) describe, climate-related changes and disasters have different, gendered effects that stem from the discriminatory social arrangements that render poor, low-caste, rural and indigenous women more dependent on the health of the environment and therefore more greatly affected by climate change. Mullally and Barry (2024) state that, as a result of gendered discrimination and inequalities, women suffer a greater loss of livelihoods due natural disasters as women tend to have less control over resources and have limited opportunities for employment and that climate-related loss of livelihoods and deteriorating working conditions in the agricultural sector have more intense impacts on rural women (Mullally and Barry, 2024). Further, Molinari (2017) explains how increases in environmental degradation requires these women to travel farther and devote increasing amounts of time in the collection of necessities such as water, fuel, fodder, and forest produce. The additional time spent collecting necessities means there is less time available for education and other income-generating activities (Molinari, 2017).

Bharadwaj et al. (2022) note that while migration can be a viable option during a climate crisis, it has social consequences for both the migrants and their family members, namely women, children, and the elderly, who are left behind. The fragmentation of the family alters gender roles and, as Molinari (2017) describes, when men migrate due to environmental degradation, the work left to women intensifies. In the aftermath of climate-related disasters, women and girls face increased risk of trafficking due to family fragmentation, loss of support networks, the disruption of social norms, and displacement into insecure disaster relief camps (Mullally and Barry, 2024). Molinari (2017) points to a particular example of this in the aftermath of climate-change disasters in the Indian Sundarbans, where there were reports of labor recruiters and contractors who sought out women and children in these precarious situations with false promises of legitimate work and marriage. These recruitment networks often operate with the protection of local officials who accept bribes to overlook fraudulent job

offers or falsified documentation, which reflects the same petty corruption that enables environmental crime and labor trafficking more broadly (OHirsi, 2026; UNODC, 2020).

Given the disproportionate negative effect of climate disasters on women and children, especially girls, which unequally heightens their vulnerabilities and elevates their risk of trafficking, researchers have called for climate-related migration policies to address these gender issues. As Basita (2006) states, current migration policies do not have gender-neutral effects and governments need to integrate gender awareness in their migration policies to counter these inequities. In reference to trafficking, Duong (2020) notes that migration policies need to consider issues of gender to protect migrants from trafficking and, further, anti-trafficking policies must be gender responsive to successfully address the specific needs of trafficked victims.

Several researchers have highlighted the shortcomings of current policies that fail to account for gender issues. Specifically, Mullally and Barry (2024) state that climate-smart agricultural policies and programs often fail to address the gendered inequities in land tenure and control over natural resources, exacerbating the disadvantages faced by rural women which, in turn, further increases their trafficking risk. Bharadwaj et al. (2022) discuss the poor conditions in migrant-receiving areas that are often inadequately prepared to accommodate migrant women with gender-safe, basic shelter and sanitation facilities. More broadly, Duong (2020) describes how both supportive and restrictive migration policies have different, gendered effects. In reference to restrictive migration policies and tight border controls, Duong (2020) notes these controls do not stop migration, rather the effect of these policies is that migration becomes more dangerous and, as a result, migrants, especially women and girls, become more vulnerable to trafficking that is pushed even further underground (Kempadoo, 2005). Further, if restrictive migration policies are effective in preventing female migration, these policies force women to remain in an undesirable environment that they want to leave, which further exacerbates their vulnerabilities (Duong, 2020). Alternatively, supportive migration policies in developing countries that encourage citizens to seek employment in wealthier countries often lack the necessary education and institutional support needed for successful migration that, once again, only serves to increase women and girls' trafficking risk, especially sex trafficking (Duong, 2020).

In the context of climate change, Mullally and Barry (2024) discuss the need for a greater understanding of the gendered human trafficking risk; specifically, an understanding that goes beyond the vulnerabilities of women and girls and recognizes that these vulnerabilities are the result of failures to remedy systemic gendered inequities. In this light, Jackson (2023) describes the need for gender-specific skills-employment training and improved outreach in areas that are high-risk for climate change and, in turn, trafficking. Such policies would address the inherent gender inequity in education and economic opportunities, specifically in areas that are high-risk for environmental degradation, thus reducing gendered vulnerabilities and, in turn, trafficking risk. As Bastia (2006) states, feminist-based research has demonstrated that for women to benefit from any policy it is necessary that the policy be gender aware, meaning that it recognizes and addresses its differential impact on women and men. Thus, it is imperative that policies related to environmental degradation and migration intentionally take into consideration the complex gendered issues that are woven throughout climate change, migration and trafficking processes.

In summary, the disproportionate effect of climate change on women and girls demand migration and anti-trafficking policies be explicitly gender-based. Policies that lack a nuanced understanding of the ways in which gender shapes the experiences and risks of environmental migration will continue to fall short in protecting those most at risk for trafficking. More broadly, policy makers need to prioritize gender-based initiatives that empower affected communities by addressing structural inequalities such as promoting access to education and economic opportunities.

Environmental Crimes, Environmental Degradation and Human Trafficking

Adding to these complexities is a growing body of research that has identified a cyclical or feedback loop between environmental crimes, environmental degradation / climate change, and human trafficking (Bales and Sovacool, 2021; Brown et al., 2021; Sparks et al., 2021; Jackson, 2023). As discussed, it is widely established that climate change and environmental degradation leads to environmental migration and that these migrants, especially women and girls, are highly susceptible to trafficking. Nonetheless, there is another malicious layer to this phenomenon; namely that environmental migrants who fall prey to traffickers can be forced to participate in environmental crimes that further damage the environment and lead to further environmental degradation, forcing the vicious cycle to begin anew with another wave of environmental migrants who are vulnerable to trafficking (Bales and Sovacool, 2021; Brown et al., 2021; Sparks et al., 2021; Jackson, 2023).

Environmental Crimes

Nellemann et al. (2016, pg. 7) state that although there is not a universally agreed upon definition of 'environmental crime', "...it is often understood as a collective term to describe illegal activities harming the environment and aimed at benefitting individuals or groups or companies from the exploitation of, damage to, trade or theft of natural resources, including serious crimes and transnational organized

crime.” Environmental crimes include illegal logging, fishing, mining, wildlife trade and pollution crimes such as the illegal dumping of pollutants into the air, water, and soil, and the release of toxic and/or hazardous substances into the environment (UNODC, n.d., b). According to the U.N. (n.d.), at least 45 percent of countries impose penalties of four or more years in prison for engaging in some environmental crimes, which signifies these environmental crimes as “serious” crimes under the U.N. Convention Against Transnational Organized Crime. Nonetheless, environmental crime is the fourth-largest criminal activity in the world and is estimated to be growing at a rate between five and seven percent a year (Nellemann et al., 2016). The growth rate of environmental crimes can be attributed to many sources such the lack of a universal definition environmental crime, varied legal systems across nations, and its intersection with other crimes, among other factors that challenge the identification and prosecution of environmental crimes (United Nations Interregional Crime and Justice Research Institute, n.d.).

While there are numerous obstacles in prosecuting environmental criminal activity, prior research consistently identifies corruption as, once again, the root facilitator of many of these environmental crimes. In other words, corruption serves as the grease that allows these illegal activities to occur in the first place. In reference to environmental outcomes, corruption occurs at two levels: the high level, or ‘grand’ corruption, and at the lower level, or ‘petty’ corruption. At the high level, grand corruption can occur when politicians accept bribery payments in exchange for promoting more lenient environmental policies and regulations (DiRienzo and Das, 2019). Petty corruption drives the level of compliance with environmental regulations, or the extent to which these regulations are distorted (Wilson and Damania, 2005; Rose-Ackerman, 1978; Welsch, 2004; DiRienzo and Das, 2019). Petty corruption is more closely linked to the facilitation of environmental crimes as it occurs when officials accept bribes in exchange for overlooking or ignoring violations of environmental regulations (Wilson and Damania, 2005). As an example, in the forestry industry, Amacher et al. (2012) highlight the incentive for harvesters to make bribe payments to logging inspectors in exchange for being permitted – illegally – to log more volume than is legally permitted and avoid the penalty fees from over harvesting. Petty corruption in the forestry industry can also include the payment of bribes in exchange for overlooking falsified harvesting records to hide the illegal harvest of protected tree species and illegally transporting harvested timber (Wilson and Damania, 2005). In the fishing industry, petty corruption occurs when a fisherman is asked for or offers a bribe to an official in exchange to avoid penalties for overfishing or misrepresenting their catch (Yea and Stringer, 2021; Sundström, 2013). Sumaila et al. (2017) state that this kind of corruption in the fishery industry affects not only the quality of the marine environment but also threatens global food security. Unfortunately, petty corruption is found in other industries such as mining that results in resource depletion and pollution in addition to illegal wildlife trade that results in biodiversity loss and economic instability.

Environmental Crimes, Environmental Degradation and Human Trafficking: The Feedback Loop

Environmental crimes, often facilitated by petty corruption cause environmental degradation through deforestation, biodiversity loss, ecosystem imbalances, and the emission of harmful pollutants, which lead to climate change and increases in both slow and sudden onset natural disasters. As discussed, environmental degradation and climate change drives involuntary environmental migration that, in turn, leads to increased human trafficking. Sadly, this process does not end here as many researchers have identified a cyclical or feedback loop that involves trafficked environmental migrants who are forced to participate in environmental crimes (Bales and Sovacool, 2021; Brown et al., 2021; Sparks et al., 2021; Jackson, 2023).

Specifically, Jackson (2023) and Bales and Sovacool (2021) describe how trafficked environmental migrants are frequently forced to engage in environmentally damaging activities and, some cases, as Bales and Sovacool (2021) note, labor trafficked persons are even forced to destroy their own livelihoods. Bales and Sovacool (2021, pg. 1) state that modern slavery “...is placing under siege our national forests, wildlife preserves, and the protected homes and territories of indigenous peoples and endangered species.” Sparks et al. (2021) state that an estimated 12.2 million trafficked persons are forced to participate in environmentally degrading activities and Bales and Sovacool (2021) note that if modern slaves represented a country, it would be the third largest emitter of carbon dioxide in the world, followed only China and the United States. Further, Bales and Sovacool (2021) describe the high cost of environmental slavery as it contributes to climate change, deforestation, species loss, and a variety of pollutants and note that even a conservative estimate of all the carbon dioxide emissions generated from illegal deforestation conducted with slave labor indicates that this activity alone is a major contributor to climate change.

Sparks et al. (2021) describe three overarching patterns identified in the literature regarding the nexus of trafficking, environmental degradation, and climate change and the feedback effect. First, trafficked laborers or those subjected to modern slavery are forced to participate in environmental criminal activities and that environmental degradation is an outcome of modern slavery that often occurs due to human trafficking (Sparks et al., 2021). Second, environmental damage and unsustainable environmental practices draw vulnerable workers into situations of modern slavery by creating a demand for cheap labor in the industries that tend to have primitive and inefficient production processes. Specifically, when resources become scarce in these industries, the demand for cheaper labor arises in an effort maintain profits and, as Sparks et al. (2021) describe modern slavery in these situations can act as a producer subsidy allowing production to remain

profitable. Third, as Sparks et al. (2021) state, environmental degradation and climate change cause modern slavery and trafficking as climate change has a multiplier effect that exacerbates pre-existing disparities and poor conditions that lead to instability in livelihoods that drives environmental migration, which in turn leads to increases in trafficking. Sparks et al. (2021) note that the environmental crime, environmental degradation, climate change, trafficking nexus and the associated feedback loop are identified in multiple industries such as fishing, brickmaking, forestry, mining, manufacturing, agriculture, renewable energies, and the trafficking of wildlife. The fishing industry is used to illustrate the feedback loop.

Bales and Sovacool (2021) describe how illegal, unregulated, and overfishing conducted by forced, trafficked labor is contributing to the collapse of marine ecosystems around the world. Notably, declining fish stocks increase trafficking through two different channels. First, for those relying on fishing for income, declining stocks create negative economic shocks that encourage environmental migration and thus increase the risk of trafficking. Second, the declining fish stocks increase the demand for cheap labor to offset the increased costs of maintaining yields as fishing vessels must fish longer, deeper and further out at sea to harvest the same quantity. As Decker Sparks and Hasche (2019) describe, this cycle begins with increased efforts to maintain fishing yields, which decrease profit margins. The lower profit margins then spur the demand for cheap labor and encourage the use of forced labor (Decker Sparks and Hasche, 2019). Once ensnared on these fishing vessels, trafficked labor is forced to further illegally overharvest fish, which exacerbates the initial problem and fuels the cycle of overfishing and the demand for trafficked labor. As Yea and Stringer (2021) describe, several studies have documented to increased use of trafficked labor on long-haul fishing vessels that are linked to illegal, unreported, and unregulated fishing practices. The existence of both practices occurring on the same fishing vessel or the same fishing fleet has been characterized as a 'convergence crime' (Yea and Stringer, 2021). Further as Decker Sparks and Hasche (2019, pg. 241) state, the labor traffickers are "...already operating outside of laws and regulations, it is unlikely they will comply with binding laws that lack enforcement, or international soft laws bereft of punitive consequences for overfishing or slavery violations..."

These patterns of environmental and human rights abuses in the fishing industry are arguably most pronounced in Thailand. Sylwester (2014) states that Thailand's gulf coast is considered one of the most overfished regions in the world and its commercial fishing industry is a 'hotbed' for labor trafficking. The reasons for this are multifold. New, high-catch fishing equipment, destructive fishing practices, and widespread violations of Thailand's environmental regulations have depleted fish stocks (Sylwester, 2014). As fish stocks deplete, catches decrease, which fuels the need to offset costs through debt-bonded and trafficked labor to survive (Sylwester, 2014; Brown et al., 2021). As Brown et al. (2021) describe, the use of cheap labor allows fishing vessels to take on months-long, long-haul fishing operations that mask the actual economic cost of the ecosystem decline. The labor trafficked victims forced to spend months at sea are predominantly migrants from Myanmar who have fled their country to escape political persecution and poverty (Sylwester, 2014). The longer time at sea and distance from the coastline gives boat captains greater latitude to abuse and keep trafficked labor victims at sea and, also reduces the risk to traffickers as boats rarely return to port and thus face less regulatory oversight (Sylwester, 2014). As Yea and Stringer (2021) describe, researchers have identified horrific accounts of forced labor, violence, and death at sea on Thai fishing vessels.

An intricate and destructive feedback loop linking environmental crimes, environmental degradation and human trafficking reveal an entrenched cycle of exploitation. Environmental crimes, which are often facilitated by corruption and drive the demand for cheap labor, not only destroy ecosystems and fuel climate change, but also ensnare vulnerable populations, notably environmental migrants, in forced labor conditions that perpetuate these very crimes. Breaking this exploitative and destructive cycle requires comprehensive, cross-sectoral interventions and policies that address corruption, strengthen law enforcement, protect vulnerable communities, and remedy the fundamental drivers of environmental destruction and vulnerabilities to trafficking collectively. Only through such integrated approaches can we work toward safeguarding both the environment and the rights and dignity of those caught in this vicious cycle. Further discussion of policies implications and recommendations is provided in the following section.

Environmental Degradation and Human Trafficking: International Issues that Require International Collaboration

This article describes the intersection of two global issues and the compounding factors of corruption, policy failures, and issues of gender. First, human trafficking exists in essentially every corner of the world; it is a crime that crosses international borders and is growing at an alarming rate. Further, environmental crimes that lead to environmental destruction and climate change are not isolated to a single region but affect the entire planet. These two crimes are intrinsically linked as environmental crimes drive trafficking, which in turn leads to more environmental crime and destruction. Complicating the interwoven nature of these global crimes are corrupt practices that facilitate both environmental crime and trafficking, immigration laws that fail to address environmental migration and the associated risk of trafficking, and laws and policies that fail to account for their gendered effects. Collectively, this represents transnational governance failures. To successfully combat these crimes, international cooperation and fiercely upheld internationally recognized laws, policies, and regulations that address these issues are required.

The time to foster this international cooperation and design such policies cannot come sooner. Tomkins et al. (2018) state that global temperatures are projected to rise an estimated eight to eleven degrees Fahrenheit over the course of the next century which will result in extreme weather and damage ecosystems. As Nagy et al. (2023) describe, as the temperature rises, droughts and floods will become more frequent which will destroy crops more frequently and the moisture in the air and soil will decrease, leaving less water for plants. In reference to parts of Africa, these changes will cause tens of millions of acres of arable land to become useless in addition to fostering the growth of pest-destroying crops as these pests will face more favorable conditions (Nagy et al., 2023). Bales and Sovacool (2021) emphasize that by 2050, it is estimated that there could be more than 140 million environmental migrants, mostly from South Asia, Sub-Saharan Africa, and Latin America. This level of climate change and surge of environmental migrants will lead to unprecedented levels of trafficked persons, many of whom will be forced to engage in the very environmentally damaging crimes that caused environmental destruction in the first place. It is, therefore, imperative to design policies that recognize the interconnected issues of environmental crime and human trafficking and the compounding issues of corruption, immigration law and the gendered impact that these policies.

As discussed, researchers have highlighted the shortcomings of current policies and legislation to adequately address trafficking and environmental migration, pointing to even the lack of agreed upon the definitions of these terms across state parties, which arguably is the most critical step toward effective legislation. Gerrard (2017) also notes that several international agreements and domestic laws written to combat trafficking are inadequately designed to cope with the scale of the problem that is likely to occur as a result of climate change. Gerrard (2017) calls attention to the United Nations Framework Conventions on Climate Change (UNFCCC) that focuses on the reduction of greenhouse gas emissions but has done relatively little to address environmental migration. Molinari (2017) states that current anti-trafficking efforts for not systematically consider environmental protections to reduce trafficking risk and Mullally and Barry (2024) note that more attention has been given to sudden onset disasters and less so on slow onset disasters which could have contributed to the increased risk of trafficking of slow onset environmental migrants.

Several studies have emphasized the need for policy makers to design legislation that addresses the cyclical and codependent relationship between environmental destruction and trafficking rather than considering them in silos. Specifically, Brown et al. (2021) describe the need for researchers to recognize the global issues of human trafficking and environmental change as interconnected issues that continually shape one another and develop integrated strategies that address these issues holistically. Mullally and Barry (2024) state that the intersectional effects of climate change and trafficking must be addressed in tandem if anti-trafficking policies are to be effective and Sylwester (2014) notes that parties involved in anti-trafficking work should recognize that the goals of environmental protection align with the goals of combating human trafficking. Further, Sparks et al. (2021) describe the need to better understand and integrate anti-trafficking and slavery tools into environmental support policies.

This body of research calls for several policy and legislation recommendations that address the issues of environmental destruction and trafficking in tandem. Molinari (2017) notes that addressing both climate change and trafficking requires a diversity of strategies such as protecting local economies and ecologies, guaranteeing labor and migration protections, supporting and diversifying local livelihoods, and impactful climate change action that comes with long-term commitments. Hill (2018) describes the necessity of government and non-governmental organizations to account for vulnerable persons who are displaced in the wake of climate-related disasters and to develop specific protocols to enhance trafficking protections. Sylwester (2014) discusses the need for environmental mainstreaming, or the process of infusing environmental policies into programs that are traditionally non-environmental, which would enhance current regulatory efforts and could contribute to the creation of stronger and more realistic labor trafficking laws. In reference to the Thai fishing industry, Sylwester (2014) states that the current legal mechanisms cannot adequately protect migrants without taking into consideration the environmental factors that exacerbate the harm to those labor-trafficked on fishing vessels.

Jackson (2023) states that the most clearly highlighted support strategies outlined in the literature were those associated with livelihood programming, the importance of gender-specific skills and employment training, and the need for improved social and economic outreach in high-risk areas for climate change and trafficking. Gerrard (2017) calls for multiple actions to address those subject to trafficking as a result of climate change; the reduction of greenhouse emissions, help for communities to adapt to climate change to prevent environmental migration, improved preparedness for disasters, support for vulnerable groups, namely women and children, plans for orderly relocation when necessary, the arrangement of safe passage of environmental migrants, support for environmental migrants to develop new livelihoods, and stronger enforcement against traffickers. Hoogesteyn et al. (2024) also discuss several broad recommendations highlighted in the literature for the prevention and responses to human trafficking following natural disasters. These initiatives encompass international efforts to standardize terminology and incorporate post-disaster trafficking risks into global agreements. At the national and local levels, they range from strengthening legal protections for displaced persons and raising community awareness before and after disasters, to integrating disaster relief with anti-trafficking efforts. Crucially, these frameworks must address underlying social vulnerabilities alongside the root cause of corruption.

In this narrative there is, perhaps, a silver lining. Notably, Sparks et al. (2021, pg. 189) pose the question, “(i)f contemporary forms of slavery obstruct sustainable development and contribute to climate change and other environmental challenges, how would the elimination of modern slavery contribute to sustainable development?”. In other words, interventions aimed at mitigating one dimension of this crisis may yield beneficial secondary effects in suppressing the other. Sparks et al. (2021) note that by placing an otherwise invisible population (trafficked persons or persons at high risk of trafficking) in juxtaposition with climate change and sustainability issues, this has the potential for improved outcomes on both fronts. As Bales and Sovacool (2021) pointedly discuss, the linkages between climate change and modern slavery means that addressing one brings a co-benefit in terms of remediating the other. Bales and Sovacool (2021) offer a two-step process to counter both crimes. The first step, as Bales and Sovacool (2021) describe, is to establish adequate enforcement of international and national laws against slavery and related crimes such as trafficking. The second step involves the employment of freed slaves who choose to participate in the rebuilding, replanting, and support of the natural environments they had previously been forced to destroy (Bales and Sovacool, 2021).

Although this study offers evidence that the global issues of human trafficking and environmental degradation are interconnected and feed each other, this work is not without its limitations. Notably, this study relies on a qualitative synthesis of secondary literature, public reports, and existing policy frameworks. As such, it does not offer empirical modeling or original field-based data testing the precise strength of the feedback loop across all regional jurisdictions. Furthermore, because human trafficking and environmental crimes operate primarily in shadow economies, reliable quantitative data remains sparse globally, limiting direct empirical verification. Future research should pursue regional empirical case studies and econometric modeling to quantify the specific impact of anti-corruption interventions on trafficking outcomes.

Acknowledging these limitations, there remains undeniable evidence that unless the global community takes swift and significant action, the climate will continue to change and cause catastrophic disasters and destruction. These disasters will lead to environmental migration and, most likely, increases in trafficking. Given the cross-border dynamics of these crimes, individual state action alone is unlikely to be sufficient without coordinated international governance. The time to initiate this endeavor is now.

Declarations

Author Contribution

Author Contributions: C.D. and J.D. contributed equally to the conceptualization, theoretical development, policy analysis, and drafting of this manuscript. Both authors read and approved the final manuscript.

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