
GLOBAL NORTH - SOUTH RELATIONS TOWARDS THE E-WASTE CRISIS IN GHANA

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ABSTRACT

Global electronic waste (e-waste) flows reveal an unequal or asymmetrical relationship between countries in the Global North and countries in the Global South. Ghana is one of the main destinations for e-waste from Europe and America, even though its contribution to global e-waste production is relatively small. This study aims to analyze how the Global North–Global South relationship is reflected in the practice of e-waste disposal in Ghana and to examine the resulting social, economic, and environmental impacts. This study uses a qualitative approach with literature review and document analysis methods. The results show that the flow of e-waste to Ghana is influenced by global economic inequality, differences in waste management costs, and weak implementation of environmental regulations in the destination country. Through the perspective of Environmental Justice, this study shows that the e-waste crisis in Ghana is a form of structural environmental injustice. Global North countries reap economic benefits, while the environmental and social impacts are borne by Global South countries. This study emphasizes that the issue of e-waste cannot be separated from global power relations and international environmental justice issues.

Keywords: E-waste, Global North-South, Ghana, Environmental Justice, Toxic Colonialism.

INTRODUCTION

The global environmental crisis is one of the greatest challenges facing the modern world. Issues such as climate change, environmental pollution, ecosystem degradation, and the rise in hazardous waste demonstrate that human activities have placed significant pressure on global environmental sustainability. One form of pollution that is becoming increasingly alarming is the growing volume of electronic waste (e-waste) (Alisya Afifah Maulidina Putri Abdilllah et al., 2024).

The rapid development of digital technology has driven an increase in the production and consumption of electronic devices in various countries, particularly in developed nations. The ever-faster replacement of electronic devices has caused the global volume of e-waste to continue rising every year. According to data from the Global E-waste Monitor 2024, global e-waste production has increased significantly from approximately 41.8 million metric tons in 2015 to around 66 million metric tons in 2024 (Pangarkar, 2023). However, only about 17–20% of electronic waste is successfully recycled in an official and environmentally friendly manner, while the rest ends up in open dumps, is burned illegally, or is shipped to developing countries .

Global E-Waste Generation Trends

E-Waste Generated (in million metric tons) From 2015 to 2025

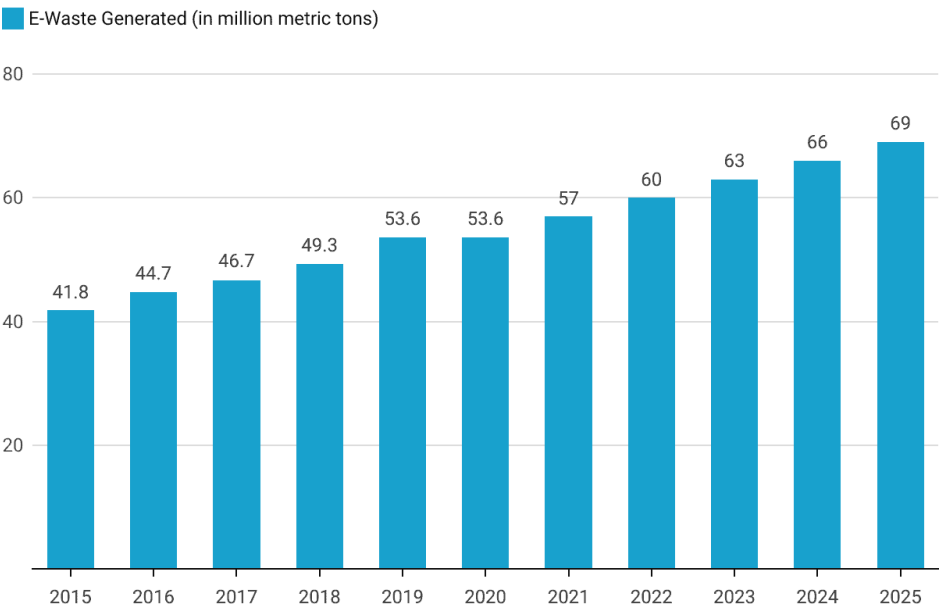


Figure 1. Global E-Waste Production 2015–2025
Source: Scoop 2023

The graph shows a consistent upward trend in global e-waste volumes over the past decade. This increase reflects high levels of technology consumption worldwide, particularly in the Global North, which serves as the world’s primary producer and consumer of electronic devices. On the other hand, the capacity to manage electronic waste has not kept pace with the rise in production, resulting in the majority of electronic waste being diverted to developing countries in the Global South.

This phenomenon highlights the disparities in the global environmental management system. Developed countries generate the majority of the world's e-waste, yet the burden of pollution and its environmental impacts is largely borne by developing countries. Ghana stands as one of the most striking examples of this situation. The city of Agbogbloshie in Accra is known as one of the world's largest e-waste dumping and recycling sites, receiving a flood of electronic waste from the United States, the United Kingdom, Germany, and other developed nations (Ewastemonitor, 2024). The influx of e-waste into Ghana not only causes environmental pollution but also impacts the health and social conditions of the community. Many people, including children, are involved in burning and dismantling electronic waste to extract valuable metals without adequate safety protection. These conditions demonstrate that the e-waste issue is not merely an environmental problem but is also linked to economic inequality and Global North–Global South relations within the international trading system (Laville, 2019).

Against this backdrop, this study aims to analyze how the relationship between the Global North and the Global South is reflected in the practice of dumping e-waste in Ghana, as well as how this practice creates environmental injustice within the context of the global environmental crisis .

THEORY AND CONCEPTS

Environmental Justice

This study uses Environmental Justice theory as the primary framework for analyzing the unequal relationship between the Global North and the Global South regarding e-waste. This theory emphasizes that every community has an equal right to a clean, healthy, and safe environment, regardless of economic status or political power. According to Robert D. Bullard, environmental justice explains that vulnerable groups and developing countries often bear the brunt of environmental pollution, even though their contribution to such damage is relatively small. In the context of this study, Ghana serves as an example of how a Global South country bears the burden of pollution from electronic waste that originates largely from developed nations (Bullard, 2008).

In addition to Bullard, Schlosberg emphasizes that environmental justice is not only about people but also about the protection of ecosystems and overall environmental sustainability (Schlosberg, 2007). Meanwhile, Dayna Nadine Scott divides environmental justice into two main aspects: distributive justice and procedural justice. Distributive justice concerns the fair distribution of environmental benefits and risks, while procedural justice emphasizes the importance of affected groups' participation in environmental decision-making (Scott, 2014).

This study also employs the concept of toxic colonialism the practice of transferring hazardous waste from developed to developing countries. This concept illustrates how Global North nations exploit the weak regulations and economic conditions of Global South nations to shift the burden of environmental pollution. In the case of Ghana, the export of e-waste from Europe and the Americas reveals a pattern of global inequality that positions developing nations as the world's dumping grounds for electronic waste. All three figures discuss environmental justice, but with different emphases. Bullard focuses more on social and racial inequalities, particularly how vulnerable communities often bear the brunt of environmental pollution due to their weak social standing. Meanwhile, Schlosberg takes a broader, more philosophical approach, arguing that justice is not merely about humans but must also consider nature, ecosystems, and all living beings. Scott, on the other hand, views environmental justice as a tool for political struggle, focusing on how decision-making processes often exclude affected groups. He emphasizes the importance of participation and recognition for local communities that have long been marginalized in environmental issues.

Ghana serves as a highly relevant case study. Every year, thousands of tons of e-waste from countries such as the United States, the United Kingdom, and Germany are shipped to Ghana. In the city of Agboblshie, one of the world's largest "electronic graveyards," many residents including children are forced to work scavenging and burning electronic waste to extract valuable metals. This work is done without protective gear and poses significant health risks. The countries exporting this waste often claim their goods are still usable, even though most are broken and toxic. This is not merely the export of used goods, but a new form of global inequality perpetuated by developed nations. By employing these three perspectives, researchers can view the issue of e-waste dumping in developing countries like Ghana not merely as a matter of pollution, but also as a matter of power, global justice, and who truly holds the voice in environmental matters. These three perspectives complement one another and provide a more comprehensive understanding of how inequalities in international relations are reflected through tangible environmental injustices.

Conceptual Framework

This study is based on a theoretical framework that explains the global increase in e-waste from 2015 to 2025, which has become one of the causes of the environmental crisis. This phenomenon has emerged alongside technological advancements and the consumption of electronic devices, particularly in developed countries (the Global North). However, this increase in production has not been accompanied by proper and environmentally friendly waste management, resulting in the majority of e-waste ending up in developing countries (the Global South), including Ghana. Yet, this country's contribution to global e-waste production is very small. This study employs Environmental Justice theory to highlight the importance of equal rights to a clean and safe environment for all nations, free from discrimination based on economic power. will be explained in this research:

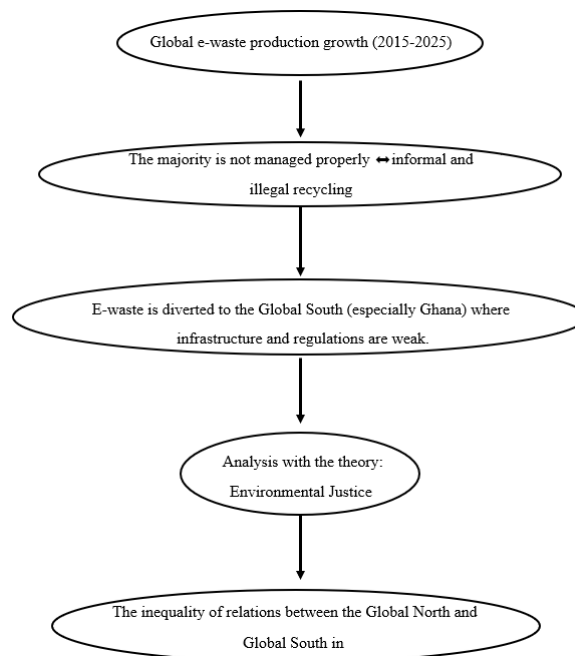


Figure 2. Research Conceptual Framework
Source: Compiled by the Author (2026)

RESEARCH METHODS

This study employs a qualitative method with a descriptive approach to gain an in-depth understanding of the practice of e-waste disposal from Global North countries to Ghana, as well as its connection to inequalities in international relations and the global environmental crisis. A qualitative method was chosen because it can explain social phenomena in greater detail through the analysis of meanings, relationships, and patterns emerging from various data sources. According to John W. Creswell, descriptive qualitative research is an approach used to describe and interpret the meanings that individuals or groups assign to a particular social phenomenon or event (Creswell, 2003). Creswell further emphasizes that qualitative research is emergent in nature, meaning that the research design and direction may evolve throughout the research process.

The research focuses on how e-waste trade practices reflect the unequal relationship between the Global North and the Global South, with Ghana as the primary case study. Ghana was chosen because it is one of the main destinations for global e-waste flows and has the most well-documented environmental impacts, particularly in the Agbogbloshie area of Accra. This study utilizes secondary data obtained from scientific journals, reports by international organizations such as UNEP, WHO, the Basel Convention, and the Global E-waste Monitor, as well as news articles and policy documents related to e-waste and environmental justice. Data collection was conducted through *content analysis* to identify patterns, themes, and representations regarding the global e-waste trade.

The data analysis technique follows the Miles, Huberman, and Saldaña model, which consists of three stages: data condensation, data presentation, and drawing conclusions. The collected data was then analyzed using Environmental Justice theory and the concept of toxic colonialism to explain how the burden of environmental pollution is shifted from developed to developing countries through international e-waste trade practices.

DISCUSSION

A. Overview and Patterns of Global North–South Relations in E-waste Flows to Ghana

Global E-waste Flow Patterns

Advances in digital technology and high consumption of electronic devices in developed countries have led to a global increase in e-waste production. Ghana is one of the countries most frequently associated with the e-waste problem due to its strategic position within international trade networks. The Port of Tema in Ghana has become a major entry point for used electronic goods from Europe and North America (Lubis et al., 2024). The flow of e-waste from the Global North to Ghana has been structured since the early 2000s. Developed countries such as the United States, the United Kingdom, Germany, and the Netherlands ship used electronic devices labeled as “used electronics” or “donations.” In practice, most of these items are already broken and immediately become waste upon arrival in Ghana (Ginting et al., 2022). E-waste flow patterns indicate that Global North countries utilize developing nations as the final destination for electronic waste. After China and India tightened restrictions on electronic waste imports through stricter environmental policies, Ghana and Nigeria emerged as the new primary destinations in West Africa.

The Port of Tema serves as the main distribution hub for e-waste in Ghana. Electronic goods that are still usable are resold in local markets, while broken items are taken to areas like Agbogbloshie to be dismantled and burned to extract valuable metals such as copper and aluminum. This pattern has continued to evolve from 2000 to 2024, with increasing volumes and more modern types of goods, ranging from cathode-ray tube televisions to smartphones and laptops (UNEP, 2024).

From 2021 to 2024, the patterns of e-waste flows changed, though not entirely. The main difference lies in the shipping routes and methods used to disguise shipments, not in their destination. As regulations in Europe became stricter—particularly through EPR policies and efforts to increase domestic recycling rates—exporters of electronic waste began using indirect routes. The pattern shifted from direct shipments to Ghana to transiting through countries such as Turkey, the United Arab Emirates, Nigeria, and Malaysia before finally being shipped back to West Africa. This was done to avoid port inspections in Europe and minimize the likelihood of containers being flagged as illegal (Owusu-Sekyere & Aladago, 2023). However, these goods ultimately still end up in Ghana, primarily through the Port of Tema, which remains the main hub for e-waste flows in the region. The internal pattern has also not changed significantly: goods still suitable for sale are marketed in Accra, while damaged goods enter the informal recycling channels that have existed for the past 20 years.

B. Factors Contributing to the Influx of E-waste into Ghana

The increase in the flow of e-waste to Ghana is not a coincidence, but rather the result of a combination of interrelated global structural, economic, and political factors. This phenomenon illustrates the unequal relationship between the Global North and the Global South, in which Ghana has become a tangible symbol of toxic colonialism—a form of modern colonialism that positions developing countries as “dumping grounds” for the negative impacts of development in developed nations. Here are some of the key factors that have made Ghana a primary destination for global e-waste disposal:

Weak Environmental Regulations and Oversight

Although Ghana has ratified the Basel Convention and has national regulations regarding e-waste management, implementation on the ground remains weak. The Port of Tema handles thousands of containers each month, making it impossible to conduct thorough physical inspections. As a result, many broken electronic items slip through labeled as “used goods in good condition.” A lack of coordination among agencies and weak law enforcement also make Ghana a destination considered safe for exporters of electronic waste from developed countries (Basel, 1989).

In addition to technical limitations, poor coordination among agencies also poses a serious obstacle. E-waste oversight involves many stakeholders, ranging from port authorities, customs, the Ministry of Environment, to local governments. However, suboptimal coordination has led to fragmented oversight. Each institution operates within its own capacity and mandate, without an integrated system capable of tracking the movement of electronic goods from the port through to the final stage of management. Consequently, once used electronic goods enter the market or the informal sector, state control becomes increasingly weak (Adrian et al., 2020). From an environmental justice perspective, this situation illustrates how ecological burdens and health risks are systematically shifted from industrialized nations to developing countries. Global North nations, as the primary producers of electronic waste, possess the technological and financial capacity to manage their own waste but opt for the cheaper alternative of shipping it to countries with weaker management capabilities. As a result, local communities in Ghana bear the brunt of pollution, health risks, and environmental degradation that are disproportionate to the economic benefits they receive. This situation underscores that the e-waste crisis in Ghana is not merely a technical issue of waste management, but a tangible manifestation of power imbalances in Global North–South relations that result in transnational environmental injustice (Abderrahmane, 2024).

Economic Factors and Dependence on the Local Market

The high demand for inexpensive electronic goods in Ghana is one of the main causes of e-waste inflows. For low-income communities, used electronic goods are a more affordable option compared to new products. This situation creates a stable market for imported used electronic goods. Additionally, the informal recycling sector, such as in Agbogbloshie, provides employment opportunities for thousands of poor people. However, these activities are carried out without adequate safety protections and result in serious environmental pollution. Economic factors play a significant role in explaining why Ghana continues to be a major destination for e-waste imports. The high demand for used electronic goods in Ghana's domestic market creates highly favorable conditions for exporters from Global North countries. For most Ghanaians, particularly low-income groups, used imported electronic devices are the only affordable option for meeting their daily communication, educational, and work needs. Prices for imported used electronics can be as low as one-quarter to one-third of the price of new products, keeping the secondhand market vibrant and continuously growing (Canavati dkk., 2022). This situation creates a stable demand structure, where used electronics are not merely accepted but have become an integral part of Ghana's urban economy.

Exporters from Europe and the Americas then capitalize on this market condition to channel large volumes of used electronics with relatively low economic risk. In practice, shipments of used goods often mix functional devices with those that are already broken or nearing the end of their useful life. As long as some of the goods can still be sold in the local market, the shipping container is still considered profitable, even if the rest immediately turns into waste. This pattern makes the cost of disposing of e-waste much cheaper for exporters compared to if the waste had to be processed in the country of origin, which has strict environmental standards and high management costs (Lidman, 2016).

Global Economic Inequality and Waste Management Costs

Developed countries face extremely high costs for managing electronic waste due to strict environmental standards and advanced technology. Conversely, the cost of shipping waste to developing countries is far cheaper. This cost disparity creates an economic incentive for Global North countries to export e-waste to Ghana. This situation highlights an inequality in the global economic system, where developing countries bear the environmental impact of technology consumption by developed nations. Global economic inequality is a key factor explaining why the flow of e-waste from Global North countries continues to head toward Global South countries, including Ghana. According to the Global E-waste Monitor 2024 published by the United Nations University (UNU), the United Nations Environment Programme (UNEP), and the International Telecommunication Union (ITU), global e-waste production increased significantly from 41.8 million metric tons in 2015 to approximately 62–66 million metric tons in 2022–2024. However, of this total electronic waste, only about 17–20 percent is officially managed and recycled through safe and environmentally friendly systems. The remainder is poorly documented and has a high potential to flow into informal channels or across borders to regions with weaker oversight.

One of the main causes of this situation is the high cost of e-waste management in developed countries. UNEP emphasizes that managing electronic waste in Global North countries requires advanced technology, strict occupational safety standards, and compliance with complex environmental regulations. This makes the cost of processing e-waste in developed countries significantly higher than in developing countries (UNEP, 2024). Reports from UNEP and the OECD indicate that the cost of processing hazardous waste in Europe and North America can range from several hundred to over a thousand dollars per ton, depending on the type and level of hazard of the waste. In contrast, the

logistics costs of shipping electronic waste to developing countries, including West Africa, are relatively much lower as they cover only shipping costs and basic administrative fees. It is this vast cost disparity that creates a strong economic incentive for exporters from the Global North to export e-waste abroad rather than manage it domestically..

Ghana's Position in the Global Trade Structure

Ghana maintains close trade ties with European nations and the United States, primarily as a supplier of raw materials. This economic dependence leaves Ghana with relatively weak bargaining power in international trade. The established trade routes are subsequently exploited as entry points for used electronic goods and e-waste from the Global North.

C. The Impact of the E-waste Crisis in Ghana

The influx of e-waste into Ghana has had a profound impact on various aspects of people's lives, particularly in the Agbogbloshie area, which is known as one of the world's largest informal recycling hubs. These impacts are not only environmental but also social and economic, and they highlight how Ghana's position as a recipient country exposes it to far greater risks than those faced by producing countries. Posisi Ghana dalam struktur perdagangan global turut berkontribusi terhadap masuknya e-waste dari negara-negara Global North. Secara ekonomi, Ghana memiliki hubungan dagang yang erat dengan negara-negara Eropa dan Amerika Serikat, khususnya dalam perdagangan komoditas primer seperti kakao, emas, minyak, dan mineral lainnya. Pola hubungan ini mencerminkan relasi perdagangan yang tidak seimbang, di mana Ghana lebih banyak berperan sebagai pemasok bahan mentah, sementara negara-negara maju mendominasi sektor industri dan teknologi. Ketimpangan struktur perdagangan ini menciptakan ketergantungan ekonomi yang membuat Ghana berada pada posisi tawar yang relatif lemah dalam sistem perdagangan internasional (Annim, 2024).

Social Impact

The influx of e-waste into Ghana has caused serious and multifaceted social impacts, particularly for communities living and working around the Agbogbloshie area in Accra, known as one of the world's largest informal e-waste recycling hubs. The ever-increasing flow of e-waste has created new livelihood patterns for urban poor communities, where many young people and adolescents depend on dismantling electronic devices, sorting components, and burning cables to extract valuable metals such as copper and aluminum. However, this work is carried out under highly precarious conditions due to the absence of employment contracts, safety training, or personal protective equipment. Field photos from Agbogbloshie, widely featured in reports by the Basel Action Network and UNEP, show workers burning cables in the open without masks or gloves, with thick black smoke shrouding residential areas. These conditions have a direct impact on the public's health, marked by a high risk of burns, physical injuries, and respiratory disorders experienced by both workers and nearby residents (Sherburne, 2025). Biomonitoring studies conducted in Agbogbloshie indicate that blood levels of lead and other heavy metals among e-waste workers are significantly higher than in control groups, leading to various health issues that impair work capacity and quality of life. These health impacts not only affect individuals but also burden families due to rising medical costs and decreased work productivity. Furthermore, the involvement of children and adolescents in the e-waste sector highlights that this issue is closely linked to the loss of access to education and the intergenerational reproduction of poverty. The study emphasizes that social risks such as child labor and weak labor protections are direct consequences of global economic structural inequalities, where the social burden of

technology consumption in developed nations is shifted to developing countries with limited regulatory capacity. Thus, the social impacts of e-waste in Ghana cannot be understood solely as a consequence of informal economic activities. Rather, it is a manifestation of social and economic injustice within the global trade and production system (Laville, 2019).

Economy Impact

The influx of e-waste into Ghana has had a paradoxical economic impact: while it creates a source of income for the urban poor, it also inflicts far greater long-term economic losses on the country. In areas such as Agbogbloshie, the informal e-waste management sector involves tens of thousands of people, both directly and indirectly. A report by the International Labour Organization (ILO) notes that approximately 25,000 workers are directly involved in the informal e-waste sector, while more than 120,000 others depend indirectly on these activities to meet their basic needs (Lundgren, 2012). The majority of workers are young people and internal migrants, who choose the e-waste sector due to low barriers to entry and the lack of viable alternative employment.

Although it absorbs a large workforce, the income generated by the informal e-waste sector is relatively low and unstable. The report indicates that most e-waste workers earn only a minimum income sufficient to meet basic daily needs. This income level is highly dependent on the amount of material successfully collected as well as fluctuations in metal prices in the market, thus failing to provide long-term economic certainty (Lundgren, 2012). This situation underscores that the e-waste sector functions more as a survival strategy than as an economic sector capable of driving social mobility or improving well-being.

From an economic value perspective, the UNDP estimates that e-waste activities in Ghana generate an annual economic value of approximately USD 105–268 million, primarily from the recovery and trade of valuable metals such as copper and aluminum (UNEP, 2015). However, the majority of these activities take place in the informal sector and are therefore not recorded in the official tax system or economic statistics. Consequently, although it generates local economic activity, the e-waste sector does not make a significant fiscal contribution to the country. Estimates in the Basel Convention report indicate that if all e-waste activities in Ghana were included in national economic calculations, their contribution to Ghana's Gross Domestic Product (GDP) would range from only 0.29% to 0.55%. This figure is relatively small compared to the large number of workers employed and the social and environmental risks involved. These findings indicate that the e-waste sector has a very low labor-to-value-added ratio, making it inefficient as a driver of national economic growth (Prakash & Manhart, 2010).

In addition to low value-added, informal e-waste management also incurs significant indirect economic costs, particularly through health and environmental impacts. Exposure to hazardous substances such as lead, mercury, and dioxins increases the risk of chronic diseases among workers, which ultimately reduces labor productivity and increases household expenditure on medical treatment. The ILO report highlights that health costs and lost workdays due to e-waste-related illnesses constitute economic losses that are often overlooked but cumulatively reduce national economic efficiency. The economic impacts of e-waste also have the potential to spill over into other productive sectors. Soil and water contamination around e-waste processing sites can degrade the quality of the living environment and disrupt economic activities of surrounding communities. In the long term, this environmental degradation risks reducing the productivity of strategic economic sectors, thereby weakening the foundation for sustainable economic development. Within the framework of global political economy, the ILO report emphasizes that Ghana's position in the e-waste management chain reflects structural inequalities between the Global North and the Global South (Lundgren,

2012). Developed countries reap economic benefits by shifting the burden of electronic waste management to developing countries with low labor costs and limited regulatory capacity. However, these benefits do not translate into meaningful investment or added value for Ghana's economy, while the social, health, and environmental costs are borne by local communities.

Environmental Impact

The influx of e-waste into Ghana has caused extremely serious and long-term environmental impacts, primarily due to the informal management of electronic waste without environmental safety standards. In areas such as Agbogbloshie, most e-waste is processed through manual dismantling and open burning to separate valuable metals from other components. These practices release various toxic substances into the surrounding air, soil, and water sources. Field photos widely published by UNEP and BAN show thick plumes of black smoke from the burning of cables and circuit boards, serving as the most vivid visual evidence of air pollution caused by e-waste. This smoke contains dioxins, furans, and fine particulate matter (PM_{2.5}) that are harmful to the environment and human health. WHO data indicates that long-term exposure to PM_{2.5} particles contributes to deteriorating air quality and increases the risk of respiratory diseases, as illustrated by a comparison graph of PM_{2.5} concentrations in the Agbogbloshie area against WHO-recommended air quality thresholds (Owusu-Sekyere & Aladago, 2023)

The impact of soil contamination is also significant. An environmental study in Agbogbloshie found that lead (Pb) levels in the soil were 100–200 times higher than the safe thresholds set by the United States Environmental Protection Agency (USEPA). In addition to lead, concentrations of mercury (Hg), cadmium (Cd), and arsenic (As) were also found to be far above safety standards. This data can be visualized through a bar chart comparing heavy metal levels in Agbogbloshie's soil with international standards, clearly illustrating the extreme levels of contamination (Kyere dkk., 2016). This soil contamination is persistent, as heavy metals do not break down easily and can remain in the environment for decades, threatening the sustainability of local ecosystems and future land use. Water pollution is another environmental impact that is no less concerning. Liquid waste and ash from e-waste incineration flow into water bodies around Agbogbloshie, including the Korle Lagoon River, which empties into the Gulf of Guinea. Studies by UNEP and FAO indicate that heavy metal concentrations in the water and sediments of Korle Lagoon exceed safe limits for aquatic life. This directly impacts aquatic ecosystems, leading to a decline in fish populations and other aquatic organisms. This data can be visualized through pollution flow maps showing the pathways of heavy metal movement from e-waste sites to rivers and the sea, or through graphs comparing heavy metal concentrations in water against international water quality standards (Owusu-Sekyere & Aladago, 2023).

CONCLUSION

This study shows that the e-waste crisis in Ghana is not merely the result of weak national waste management capacity or the increasing volume of used electronic goods imports, but rather a manifestation of the asymmetrical relationship between the Global North and the Global South. In this context, asymmetrical relations refer to unequal relationships, where Global North countries hold dominant control over technology production, consumption patterns, and economic benefits, while Global South countries bear the environmental, social, and health impacts without having balanced bargaining power in global decision-making. In other words, the burden of risk and damage is not shared proportionally with the source of the problem. This means that when such distributive justice and participation are not fulfilled, the resulting environmental relationship is skewed or asymmetrical. Based on the perspective of environmental justice

developed by Robert D. Bullard, a relationship can be said to be asymmetrical when the distribution of economic benefits and environmental burdens is not shared fairly among groups or regions. Thus, the main conclusion of this study is that the e-waste crisis in Ghana reflects structural injustice within the global economic system, where Global North–Global South relations are still built upon power imbalances and unequal risk-sharing. As long as these relationships remain asymmetrical—with benefits concentrated in developed countries and costs borne by developing countries—technical measures and piecemeal policies will not be able to substantively resolve the e-waste crisis. In this context, Ghana serves as a mirror reflecting how global environmental issues are, in essence, issues of global justice.

REFERENCES

- Abderrahmane (2024). Despite the hazards, Ghana's illicit waste trade is booming. ISS Africa. Retrieved August 3, 2025, from <https://issafrica.org/iss-today/despite-the-hazards-ghanas-illicit-waste-trade-is-booming>
- Adrian, S., Drisse, M. B., Cheng, Y., Devia, L., Deubzer, O., Goldizen, F., Gorman, J., Herat, S., Honda, S., Iattoni, G., Jingwei, W., Jinhui, L., Khetriwal, D. S., Linnell, J., Magalini, F., Nnororm, I. C., Onianwa, P., Ott, D., Silva, U., ... Zeng, X. (2020). *The Global E-waste Monitor 2020*. Retrieved January 17, 2026, from https://ewastemonitor.info/wp-content/uploads/2020/11/GEM_2020_def_july1_low.pdf
- Alisya Afifah Maulidina Putri Abdilllah, Aulia Vani Rahmawati, & Ubaidillah Kamal. (2024). Perubahan Iklim dan Krisis Lingkungan: Tantangan Hukum dan Peran Masyarakat. *Deposisi: Jurnal Publikasi Ilmu Hukum*, 2(2), 364–375. <https://doi.org/10.59581/deposisi.v2i2.3225>
- Annim. (2024). *Ghana 2023 Trade Report: Ghana Statistical Service*. Retrieved December 17, 2025, from <https://statsghana.gov.gh/gssmain/fileUpload/Trade/Ghana%202023%20Trade%20Report.pdf>
- BAN. (1989). *Pihak-pihak Konvensi Basel*. Retrieved December 4, 2025, from <https://www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx>
- Bullard, R. D. (2008). *Environmental Justice In The 21st Century*. Retrieved July 25, 2025, from https://www.uwosh.edu/sirt/wp-content/uploads/sites/86/2017/08/Bullard_Environmental-Justice-in-the-21st-Century.pdf
- Canavati, A., Toweh, J., Simon, A. C., & Arbic, B. K. (2022). *The world's electronic graveyard: What is the solution to Ghana's e-waste dilemma? World Development Perspectives*, 26, 100433. Retrieved December 8, 2025, from <https://doi.org/10.1016/j.wdp.2022.100433>
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed method approaches* (2nd ed). Sage Publications. Retrieved July 5, 2025, from <https://cumming.ucalgary.ca/sites/default/files/teams/82/communications/Creswell%202003%20-%20Research%20Design%20-%20Qualitative%2C%20Quantitative%20and%20Mixed%20Methods.pdf>
- Ginting, J. H., Susiatiningsih, K., & Hanura. (2022). *Ekspor Limbah Elektronik dari Beberapa Negara Eropa ke Ghana dalam Perspektif Imperialisme Ekologi*. Retrieved June 16, 2025, from <https://ejournal3.undip.ac.id/index.php/jihi/article/view/33511>
- Kyere, V. N., Greve, K., & Atiemo, S. M. (2016). *Spatial assessment of soil contamination by heavy metals from informal electronic waste recycling in Agbogbloshie, Ghana*. *Environmental Health and Toxicology*, 31, e2016006. Retrieved December 17, 2025, from <https://doi.org/10.5620/eh.t.e2016006>
- Laville, S. (2019). *UK worst offender in Europe for electronic waste exports – report*. The Guardian. Retrieved July 25, 2025, from <https://www.theguardian.com/environment/2019/feb/07/uk-worst-offender-in-europe-for-electronic-waste-exports-report>
- Lenkiewicz. (2024). *Beyond an age of waste: Turning rubbish into a resource*. UNEP. Retrieved December 17, 2025, from <https://www.iswa.org/wp-content/uploads/2024/07/ISWA-UNEP-GWMO2024-Exec-Summary-A4.pdf>
- Lidman, M. (2016). *Electronic waste: Informal economy supports thousands in Ghana slum*. National Catholic Reporter. Global Sisters Report. Retrieved January 19,

- 2026, from <https://www.globalsistersreport.org/news/environment/electronic-waste-informal-economy-supports-thousands-ghana-slum-40331>
- Lubis, N., Ainul Yusna Harahap, Rahmad Tantawi, Nuri Aslami, & Tina Novianti Sitanggang. (2024). *Dampak Perkembangan Ekonomi Digital terhadap Pertumbuhan Sektor E-commerce di Indonesia: Perspektif Teknologi, Konsumen, dan Regulasi*. Jurnal Penelitian Ekonomi Akuntansi (JENSI), 8(2), 348–259. Retrieved April 19, 2026, from <https://doi.org/10.33059/jensi.v8i2.10649>
- Lundgren, K. (2012). *The global impact of e-waste: Addressing the challenge*. International Labour Organization. Retrieved December 17, 2025, from <https://www.ilo.org/publications/global-impact-e-waste-addressing-challenge>
- Owusu-Sekyere, K., & Aladago, D. A. Owusu-Sekyere, K., & Aladago, D. A. (2023). *Material flow analysis and risk evaluation of informal E-waste recycling processes in Ghana: Towards sustainable management strategies*. Journal of Cleaner Production, 430, 139706. Retrieved November 17, 2025, from <https://doi.org/10.1016/j.jclepro.2023.139706>
- Pangarkar, T. (2023). *E-Waste Has Become a Global Concern Due to the Rapid Growth*. Market.Us Scoop. Retrieved May 17, 2025, from <https://scoop.market.us/e-waste-has-become-a-global-concern-due-to-the-rapid-growth-in-electronic-consumption/>
- Prakash, S., & Manhart, A. (2010). *In cooperation with Yaw Amoyaw-Osei (Green Advocacy Ghana) Obed Opoku Agyekum (Green Advocacy Ghana)*. Retrieved December 17, 2025, from <https://www.oeko.de/oekodoc/1057/2010-105-en.pdf>
- Schlosberg, D. (2007). *1 Defining Environmental Justice*. In D. Schlosberg, *Defining Environmental Justice* (1st ed., pp. 3–10). Oxford University Press Oxford. Retrieved January 18, 2026, from <https://greenresistance.wordpress.com/wp-content/uploads/2017/01/defining-environmental-justice.pdf>
- Scott, D. N. (2014). *What is Environmental Justice?* SSRN Electronic Journal. Retrieved July 25, 2025, from <https://doi.org/10.2139/ssrn.2513834>
- Sherburne. (2025). *The deadly trade-off of electronic waste recycling in Ghana* | University of Michigan News. Retrieved January 17, 2026, from <https://news.umich.edu/the-deadly-trade-off-of-electronic-waste-recycling-in-ghana/>
- UNEP. (2015). *Illegally Traded and Dumped E-Waste Worth up to \$19 Billion Annually Poses Risks to Health, Deprives Countries of Resources, Says UNEP report*. Retrieved January 17, 2026, from [file:///C:/Users/usEr/Downloads/Hadzic%20\(1\).pdf](file:///C:/Users/usEr/Downloads/Hadzic%20(1).pdf)
- UNITAR. (2024). *The Global E-waste Monitor 2024*. E-Waste Monitor. Retrieved May 17, 2025, from <https://ewastemonitor.info/the-global-e-waste-monitor-2024/>