



Nickel Extractivism and Environmental (In)security in Eastern Indonesia: An Integrated Eco-Justice Framework

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Abstract

The global energy transition to renewable energy through electric vehicles has resulted in a huge increase in demand for nickel. Indonesia is the world's largest nickel producer, with major mining activities concentrated in the eastern regions of Central Sulawesi, South Sulawesi, South-east Sulawesi, and North Maluku. Although nickel mining has generated economic benefits, its ecological consequences have been considerably more significant, driven by foreign corporate investment within global extractive structures. This study aims to analyze the patterns and mechanisms of nickel mining activities and their environmental impacts in eastern Indonesia. Using a descriptive qualitative approach based on a literature review, this study integrates three analytical frameworks; ecological imperialism, environmental security and Fiqh Al-Bi'ah. The findings show that nickel extractivism produces systematic ecological degradation that contributes to environmental insecurity. By integrating ecological imperialism, environmental security, and Fiqh Al-Bi'ah, this study proposes an Integrated Eco-Justice Framework as a conceptual framework for explaining the structural roots of ecological injustice while providing a normative basis for environmentally just mining governance. The framework emphasizes the principles of amanah, justice, balance, and public benefit (maslahah) that uphold human dignity (karomah insaniyyah) in line with the objectives of Maqashid Al-Sharia. This study concludes that addressing the ecological impacts of nickel mining in Indonesia requires an Integrated Eco-Justice Framework grounded in Fiqh Al-Bi'ah. Such a framework provides normative guidance for responsible natural resource governance by emphasizing environmental stewardship, balance (tawazun), moderation (wasatiyyah), and human responsibility in preventing environmental degradation.

INTRODUCTION

Global Energy sector has undergone a transition from fossil fuels to renewable energy that further expands the global supply of minerals for sustainable production in the long term (Basuhi et al., 2024), along with the increasing urgency of climate prevention through a sustainable and more environmentally friendly energy transition (ITK, 2025). One of them is the nickel and battery supply chain, which is experiencing an increase in global demand (Rusdi, 2025) for the transformation of the electric vehicle (EV) transportation sector (Umah, 2021). Indonesia has the largest nickel reserves in the world, which plays a significant role in the supply of nickel raw materials. The geological agency noted that Indonesia in 2020 had 72 million tonnes of nickel, including limonite, or about 52% of the world's accumulated nickel reserves, mainly spread in eastern Indonesia, Central Sulawesi, South Sulawesi, South-east Sulawesi, and North Maluku (Kementrian ESDM, 2019). But ironically, nickel mining activities in eastern Indonesia have an impact on the ecological system that causes environmental degradation (Bindar, 2025).

The downstream policy of the nickel mining industry in Indonesia began with Government Regulation Number 4 of 2009 on minerals and coal (Naryono, 2021). Then, in 2020, Indonesia shifted its strategic project from raw ore exports to nickel-processed products, making this project a key commodity in the electric vehicle (EV) battery supply chain. In 2022, President Joko Widodo signed the presidential regulation on the development of electric vehicles and the electric car market in the country, which aims to reduce carbon emissions (Hasiman, 2022). This strategic position then encourages Indonesia to develop investment in the nickel mining sector.

The government of Indonesia, through its policies related to the exploitation of Natural Resources in Indonesia has regulated through law No. 4 of 2009 on Mineral and Coal Mining which was later revised into law No. 3 of 2020. This law stipulates that the use of natural resources must be carried out sustainably with due regard to the welfare of society and the protection of the environment. In line with this, No. 32 of 2009 on Environmental Protection and Management also emphasizes that mining activities must meet environmental standards so as not to harm the surrounding community (Tenri et al., 2025).

However, nickel downstream through mining in Indonesia brings negative impacts that are directly felt by local communities, such as environmental degradation, river water pollution, deforestation that impacts people's livelihoods, local community welfare which includes living standards, the environment, air quality degradation, soil erosion, infrastructure, health, social cohesion, and education (Lo et al., 2024). Furthermore, mining resource extraction and trading activities have played an important role in maintaining colonial structures of inequality that impact human insecurity (Calvao et al., 2021). Previous research by Pambudi, 2025 also found that massive exploitation of nickel causes ecological damage and social inequality that people in

South-east Sulawesi, Central Sulawesi, and North Maluku directly feel. On the other hand, nickel mining activities pose significant ecological challenges and cannot be ignored, this then harms the ecosystem and raises ecocide concerns (Rosada, 2025). In East Halmahera, land expansion and coastal and marine damage continue to increase the risk to residents' safety and reduce space for food and water production for the community (Syahni, 2021).

Nickel mining activities are carried out through corporations that invest in Indonesia. However, the resulting ecological impacts are of serious concern to the people of Indonesia. Previous studies have provided comprehensive insight into the environmental impact of extractive industries such as nickel in Indonesia. Remembering that Indonesia is also a country with the largest nickel reserves in the world. However, there has not been a comprehensive study that integrates global structural patterns, environmental security, and how Islam can become a norm to examine the systemic relationship between an imperialist process and the conditions required in the framework of theology (normative) and morality. This study will describe the mechanism of nickel extractivism that impacts ecology and the environment in eastern Indonesia through integrative and religious approaches that have not been studied in depth in the context of eastern Indonesia.

Based on the background that has been described, the formulation of the problem raised in this research is: "How does nickel extractivism produce ecological impacts for local communities in eastern Indonesia?" This study aims to analyze the patterns and mechanisms of nickel mining activities and their environmental impacts in eastern Indonesia. This study is expected to provide a clear picture for the public, government, corporations, and communities in Indonesia to pay more attention to environmental safety in eastern Indonesia. In addition, it can also be a consideration in creating and developing the right policy strategy for environmental sustainability in the region.

In analyzing the case, the author integrates three frameworks of thought. First, the concept of ecological imperialism, which explains that the colonization of the environment is indicated through the plunder of the resources of some countries, the transformation of entire ecosystems, the massive movement of the population and labor that extracts resources, the exploitation of ecological vulnerabilities to promote imperialist control and capitalist development through waste disposal that widens the gap between the center and the periphery. It also includes forms of ecological damage that adversely affect the environment by disrupting sustainable relationships with the earth due to waste discharges that are more concentrated in peripheral countries than in central countries (Ginting et al., 2022). For instance, resource extraction involves ecological systems that carry biases that lead to the destruction of habitats, waste production, and flora and fauna in the surrounding area. This process is not only a form of abandonment of colonialism, but also a dynamic process that persists through modern economic and political structures (*Ecological Imperialism*, 2026).

Secondly, turning to the paradigm of environmental security, (Dalby, 2008) emphasizes 4 main points. First, environmental security is a non-traditional threat today that is cross-border, pervasive, and long-term. Second, the concept of environmental security is closely related to the concept of Human Security published by the United Nations Development Program (UNDP) in 1994, where environmental security is one of the scopes of human security. Third, one of the causes of environmental insecurity is excessive consumption by rich countries. Fourth, Dalby asserts that conflict is more likely to occur when leaders are unwilling to share the wealth of resources. In addition, this research is supported by a framework (Vogler, 2014) which states that globalization accelerates economic growth, but at the same time worsens the environment. At the same time, environmental issues have now become top of the international agenda, and Vogler underlined the need for global environmental governance.

Third, the principle of *Fiqh Al-Bi'ah* is important to note. Some of the components underlined in this study are *amanah* (mandate). One of the challenges facing humanity today is preserving nature from destruction. The concept of *amanah* is a deposit from God that needs to be maintained and is a human obligation as a caliph on earth. Humans are given the understanding to manage nature wisely and fairly. It is part of God's grace. Because the universe created by God not only serves as a place for humans, but also as a *wasilah* (intermediary) for humans to reflect and understand more deeply about the greatness of the creator. Humans have a great responsibility as managers of nature. In the Islamic perspective, the management of natural resources is a moral responsibility that every individual and society must carry out, because various losses or excessive exploitation (*mafsadah fil-ardh*) will be accounted for before Allah and affect the lives of many people.

"Do not make mischief in the land after it has been properly arranged. Pray to God with fear and hope. Indeed, the mercy of Allah is near to those who do good" (QS. Al-a'raf [7]: 56)

Therefore, as a Caliph on earth, humans must be wise and carry out their mandate as well as possible so as not to bring bad effects to the environment and the livelihoods of many people. One of the main concepts in the management of natural resources in Islam is the principle of "*tawazun*" or balance and "*wasathiyah*" or moderation. Islam teaches people to avoid extremism, both in consuming natural resources and in interacting with the environment (Muta'ali, 2025). Thus, the management of natural resources in the field of extraction must specifically require a good concept of moderation and not be excessive to avoid causing damage.

Moreover, there is ethics in Islam in the concept of *Fiqh Al-Bi'ah* or Islamic environmental law which underlines that the management of natural resources should not be solely driven by economic interests, but must consider the principles of intergenerational justice such as public interest (*maslahah 'ammah*) (Yunus, 2025), prohibition of causing damage or exploitation (*mafsadah*), and maintaining trust, justice (*'adl*), and maintaining human honor (*Karamah insaniyyah*). The concept of *Fiqh Al-*

Bi'ah is also one of the important aspects of the *Maqashid* pillars of *Sharia'* relating to the preservation of life (*hifz an-nafs*), reason (*hifz al-'aql*), property or possessions (*hifz al-maal*), heredity, and religion.

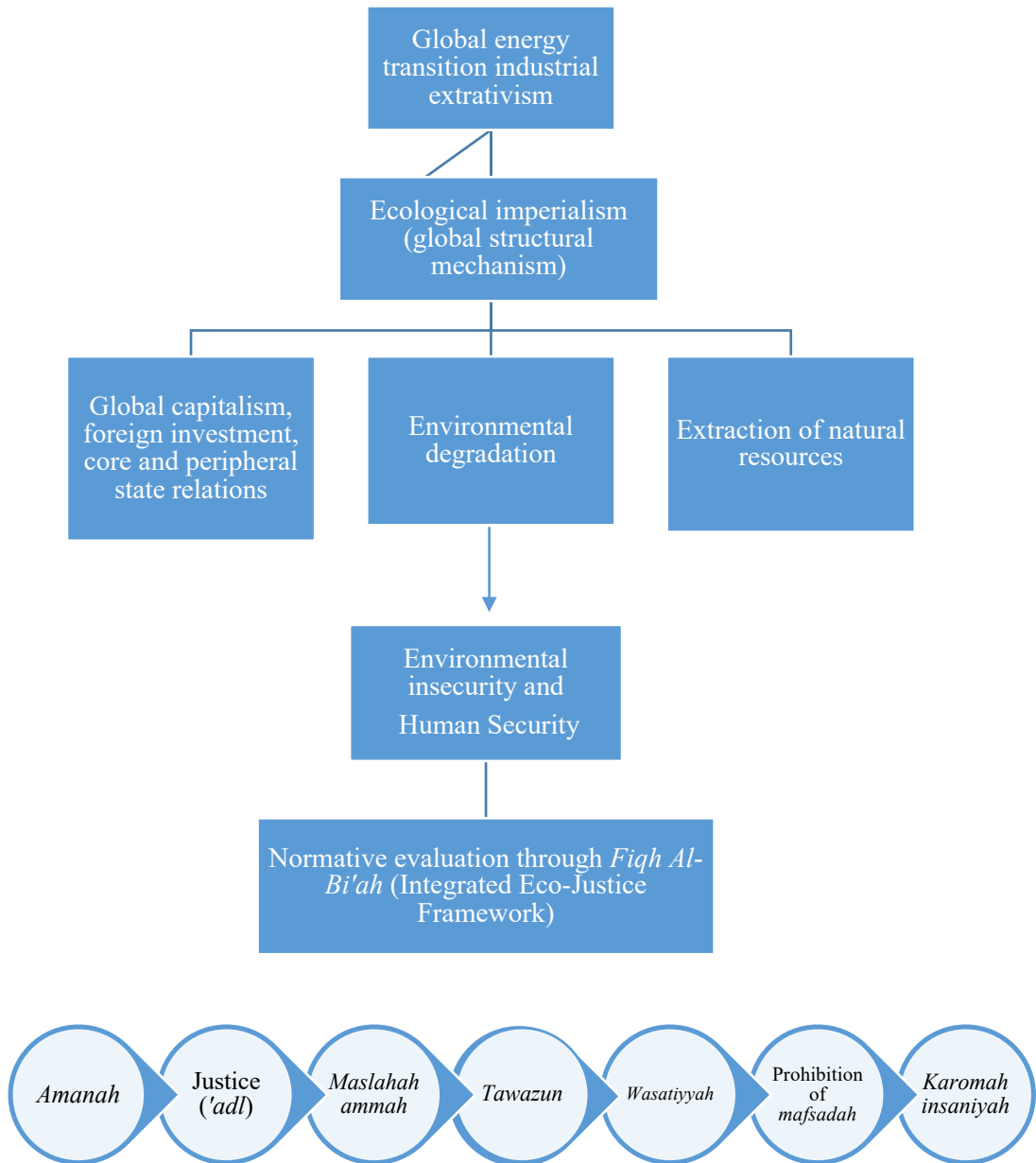


Figure 1: Researcher

This study integrates three analytical frameworks. First, the exploitation of the environment is a historical record of capitalism and the world economic system.

Ecological imperialism explains the root of the problem that operates within the structure of global domination through foreign corporations or global capitalism, which then produces environmental burdens in countries categorized as semi-peripheral and peripheral. This mechanism moves through the extraction of natural resources. This produces environmental insecurity, which is a non-traditional cross-border threat with long-term impacts, and is part of human security. These two layered mechanisms then need to be evaluated through the Islamic environmental ethics approach (*Fiqh Al – Bi'ah*) to ensure that current mining practices are in line with the principles of *amanah*, *maslahah*, *'adl*, and *karamah insaniyyah*. The interaction between these three lenses results in what the authors call an Integrated Eco-Justice Framework that emphasizes these principles and affirms not to cause harm to the earth, as reflected in verse QS Al-A'raf: 56. As a result, the integration of these three frameworks, shows how the mechanism of global power structures that perpetuate ecological injustice, and produces an integrated eco-justice framework as a conceptual approach to analyzing environmental security and ecological justice in the mining sector.

METHODOLOGY

This study uses descriptive qualitative methods. The method used in this study includes data collection techniques such as textual data. Descriptive application studies through this qualitative method emphasize context understanding, analysis, data collection, and exploring patterns based on the collected data. This qualitative study has the potential to explain the relationship between social phenomena or practices (Lamont, 2022). his approach was chosen because the purpose of the study is to analyze and explore the mechanism of global structure in terms of mining and the environment. As explained by Nurrisa et al., (2025) that qualitative approaches are descriptive and tend to use in-depth analysis. The data is used through document-based data sources of scientific journals tracked through digital research scientific databases such as Scopus and Google Scholar with a duration of the last 10 to 15 years, through keywords such as nickel mining, environmental security, ecological imperialism, mining in Indonesia, and *Fiqh Al-Bi'ah*, with additional documents derived from online news media and official reports from government agencies.

Data collection techniques are done through an integrated literature study that identifies various literature related to the issues raised in the research through literature study from various relevant sources. Data analysis techniques using in-depth analysis techniques (in-depth analysis). Data analysis techniques refer to Miles and Huberman (1984) explained that qualitative data analysis is done interactively and continuously until complete. The steps taken are organizing data, creating categories, determining themes and patterns, testing hypotheses that arise using existing data, looking for alternative explanations of data, and writing reports through making detailed descriptions of the case and its settings (Rusandi et al., 2021). This study uses three integrated frameworks. First, the theory of ecological imperialism explains global structural patterns related to the environment, then environmental security is used to

identify the impact of the mechanisms produced by ecological imperialism, and finally *Fiqh Al – Bi'ah* is used as an analysis in looking at integrated environmental justice to realize human dignity.

RESULT AND DISCUSSION

1. Structural Production of Environmental Insecurity

Today's global Energy has shifted to environmentally friendly energy sources that encourage energy-efficient practices (Esquivias, 2024). In the modern world, nickel is one of the most strategic metals for electric vehicles, high-performance lithium-ion batteries, and clean energy supplies (Nugroho et al., 2026). Indonesia has a strategic position in terms of nickel which encourages various international cooperation, such as China (Aria, 2025) and America through investment to support Indonesia's economic growth. In this movement, there is an inequality that is integrated through the market. There is a hierarchy of power between the core state, semi-periphery and the periphery state, in which the strong and rich “core” society dominates and exploits the weak and poor periphery society (Martínez-Vela, 2001). This hierarchy causes an asymmetric state that relies heavily on purely economic and material aspects in seeing economic power as a large parameter in seeing the ruling class and the exploited lower classes, as well as moving through aspects of economic imperialism that are dominated based on the needs and interests of the ruler (Christofis, 2019). The core countries control through models and technologies, positioning Indonesia as a supplier of raw materials, which then creates dependence through exploitative patterns.

Downstream nickel mining brings positive impacts, such as increased job opportunities for fresh graduates and economic investment. However, the tendency of negative impacts is more felt by local communities such as environmental degradation, river water pollution, deforestation that impacts people's livelihoods, the welfare of local communities that include living standards, the environment, decreased water quality, soil erosion, infrastructure, health, social cohesion, and education. Foreign investment through extractivist activities moves in political and economic control that systematically perpetuates inequality and injustice in the surrounding society. The colonial element of antiquity related to the exploitation of natural resources was carried out by foreign companies that moved freely without control, so the indigenous population could not do anything. However ironically, the structure of the extractive economy has not changed to this day. Indonesia is a source of life for extractive sector investment with various regulatory support, tax incentives, and security guarantees that are marred by land grabbing, population expulsion, and violence (Hartono, 2014).

On the other hand, extractivism activities result in large-scale, enclave to global price dependence. This activity is also driven by large capital investments from multinational companies that are unified in contemporary global capitalism (Navarro, 2026). This is supported by the establishment of smelters and mining business licenses (IUP) by various companies. However, the environmental burden is borne significantly where nickel mining activities have a significant impact on ecological damage and

deforestation (Hapsari et al., 2025; To'at et al., 2024). In addition, mining changes land structure with a significant decrease in vegetation, as well as environmental and ecosystem degradation that exacerbates environmental damage (Adidharma et al., 2023). Extrativist activities in eastern Indonesia cannot be understood only as an economic phenomenon, but as product of the global structure that regulates state relations in the world system until material benefits are only destined for the core country, and the environmental burden is transferred to semi-peripheral and peripheral countries. This indicates that environmental imperialism is often demonstrated through the plunder of some countries' resources, the transformation of entire ecosystems, the massive movement of population and labor that extracts resources, and the exploitation of ecological vulnerability, which further widens the gap between core and peripheral countries.

Some of the impacts that occur in Indonesia such as ecological damage and social inequality are directly felt by people in South-east Sulawesi, Central Sulawesi, and North Maluku (Satyawan et al., 2023). Meanwhile, significant ecological challenges cannot be ignored in nickel mining practices that harm ecosystems and raise concerns about ecocide. Furthermore, mining alters land structure, with a significant decrease in vegetation, as well as environmental and ecosystem degradation that exacerbates environmental damage (Jasmine et al., 2026). Additionally, mining activities also affect the agricultural sector, where land clearing for mining often destroys agricultural land. In addition, river pollution resulting from national nickel mining is related to public health; microbes in water sources can cause skin diseases such as itching, red spots, burning, pain, scaly skin, and so on (Taufik et al., 2025). Environmental damage destroyed fish habitat along the coast, resulting in damage to the livelihoods of fishermen. There was also damage to roads and bridges from company cars passing through village roads for 24 hours, and air pollution without adequate recognition and compensation from the company to the affected communities (Karsadi, 2023).

Downstream nickel in Indonesia produces pockets of extractive economies such as soaring exports and high economic growth. These benefits flow to a network of foreign companies, domestic tycoons, and political elites to fulfill the national agenda. On the other hand, local communities experience structural pressure, including ecological and social losses at the local level and economic dependence (Giftania et al., 2025). This reality can be seen clearly as a form of uncertainty and inconsistency between environmental recovery claims of responsibility for the environment and the reality of damage that occurs in mining areas, which will have an impact on environmental security as well as local communities as a disturbance to the sense of security of sustainability and long-term certainty of life. The tendency is more toward ethnocentrism than ecocentrism; this then results in ecological injustice. Nature has its own mechanisms, and humans, as guardians, have a great responsibility to maintain and preserve the environment. Understandably, insecurity in the environment is not only the result of ecologically mining activities, but also the result of a global political-economic structure that places nickel-producing areas as extraction sites. Therefore, ecological

imperialism explains the underlying causes before the various effects are discussed from the point of view of environmental safety.

2. Realizing Environmental Security with Integrated Eco-justice Framework

The mechanism of ecological imperialism impacts environmental insecurity, which is structurally produced by the interwoven relationship between politics and extractive economics. The impact of environmental insecurity from nickel mining causes ecological damage and social inequality that is directly felt by the community in South-east Sulawesi, Central Sulawesi, and North Maluku (Pambudi, 2025). This situation is reflected in 7,721 villages in Sulawesi between 2011 and 2018 that experienced slow overall welfare improvements and deforestation that almost doubled the impact on forest ecosystems (Morgans et al., 2024). Significant environmental challenges can damage ecosystems and potentially cause ecocide (Rosada et al., 2025). Along with another impact on the agricultural sector where land clearing for mining often involves the destruction of agricultural land (Karinda et al., 2024), the occurrence of river pollution due to national nickel mining, river pollution is related to public health, where microbes in water sources can cause skin diseases such as itching, red spots, stinging, pain, scaly skin and so on (Nisrina et al., 2025). Environmental damage due to massive mining also destroyed fish habitats along the coast, destroying fishermen's livelihoods. As (Sembiring et al., 2024) noted that massive deforestation to clear land for mining led to the loss of natural habitat for flora and fauna, thus threatening biodiversity in the region. The clearing of land for mining also changed the landscape and left large mine pits.

There was also damage to roads and bridges from company cars passing through village roads for 24 hours, as well as air pollution without adequate recognition and compensation from the company to the affected communities (Karsadi, 2023). In addition, nickel contributes significantly to greenhouse gas emissions, water and soil pollution, and decreased biodiversity. These findings in parallel underscore the impact of environmental and ecological degradation due to mining (Herawati et al., 2025). The government's ambition to become the world's largest nickel producer through the massive expansion of the nickel mining industry in South-east Sulawesi, South Sulawesi, Central Sulawesi, and North Maluku, has had an impact on environmental damage and coral reefs, as well as pollution in the small islands of the archipelago, also the impoverishment of women occurs in South-east Sulawesi (Naryono, 2021).

Environmental insecurity that occurs shows a form of imbalance in the relationship between man, God, and the environment. The environment becomes material for exploitation only for the sake of unilateral interests caused by human actions, this is reflected in verse QS. Al - A'raf [7]: 56 which affirms man's responsibility for the earth after it has been created and arranged properly. Understanding and awareness of the environment and ecosystems should be a strong foundation that needs to be realized, as the universe is a sign of the greatness of God. Thus, it demands care, high spiritual awareness, and responsibility (Lestari, 2025).

In East Halmahera in 2022, the expansion of nickel areas caused deforestation in Indonesia, which reached an area of 1,037,435.22 hectares and brought domino effects

in surrounding areas that caused a decrease in polluted water quality and impacted fish habitats (Rosada et al., 2023). This relationship is inseparable from the concept of the Caliph, which is intended by humans to preserve nature and its contents and to carry out moral-based recommendations in religion (Surau, 2025). Because massive environmental pollution can damage human health and other living things, and can also lead to human security (Dalby, 2008) non-traditional threats such as environmental security today are closely related to the concept of Human Security published by the United Nations Development Program (UNDP) in 1994.

Developed countries always strive to improve their competitiveness and economic growth by implementing and developing the latest technology and encouraging creativity in various industrial fields (Wepo, 2023), one of which is China which invests in Indonesia through the mining sector. As a result of social transformation, there is a change in the pattern of social interaction and the value system of society which ultimately causes horizontal polarization conflict between groups of people who support and reject mining activities. As one of the causes of environmental insecurity presented by Simon Dalby (2008), the occurrence of conflict occurs when leaders do not want to share the wealth of resources, with the intention that the wealth obtained from natural resources is placed only with the high authorities, and ultimately leads to a separate polarity of society.

The ethical dimension in Islam then introduces the concept of *Fiqh Al-Bi'ah* or environmental *Fiqh*, which underlines that natural resource management is not solely driven by economic interests, but must consider the principles of intergenerational justice such as public interest (*maslahah 'ammah*) (Yunus, 2025), prohibition of causing damage (*mafsadah*), being trustworthy and fair, and maintaining human honor (*karamah insaniyyah*). The concept of *Fiqh Al-Bi'ah* is also one of the important aspects of the pillars of *Maqashid Sharia* related to the preservation of life (*hifz an-nafs*), reason (*hifz al-'aql*), property or possessions (*hifz al-maal*), heredity, and religion.

The pattern of ecological imperialism that produces environmental insecurity can be addressed through the integration of *Fiqh Al-Bi'ah*, as outlined in what the authors call the Integrated Eco-Justice Framework. This integration emphasizes the concept of *Fiqh Al-Bi'ah* that must be implemented by fulfilling the principle of trust. That man is entrusted as a representative of God (*Caliph*) who should be able to carry out his responsibilities properly. The purpose of man was created to carry out the mandate (A. S. Muhammad et al., 2006), where natural wealth is a deposit (trust) from God. This phenomenon can be explained through the concept of the Caliph, which not only refers to the existence of man as an earthly being, but also as a spiritual representation and social administrator. In the tafsir and theological meaning in Qurtuby's, its meaning lies in the mandate of belief, in which man must maintain balance and avoid things that are not good. Excess and arrogance in terms of resource extraction will result in damage and anger from God. So its utilization should be limited by humility and respect for God (Khasani, 2025).

In principle, the management of natural resources and mining materials is joint property (*Al-Milkiyyah Al-'Ammah*), not individual ownership. Mining resources are allowed to be used, but should not be enjoyed privately (Husni et al., 2025). Thus, the principle of justice becomes an important basic foundation in all life activities, including mining activities. It is concerned with the equitable distribution of access, benefits, and social responsibilities. Justice in this case is in line with the elements that must bring collective benefit for the general benefit (*maslahah 'ammah*), maintain balance (*tawazun*), and mandate and responsibility for the welfare of the community (Yuliana, 2025). This is as stipulated through the spirit of the amendment to the Constitution Article 28h paragraph 1 of 2000 which states “*Setiap orang berhak hidup sejahtera lahir dan batin, bertempat tinggal, dan mendapatkan lingkungan hidup yang baik dan sehat serta berhak memperoleh pelayanan kesehatan*”.

Natural resource extraction activities in Indonesia, such as in Sulawesi and Maluku, not only have environmental, social, and economic impacts but also serve as a form of technical failure. However, they also indicate governance failures, including neglected environmental and public safety priorities, conflicts of interest in licensing, and regulatory biases favoring investment growth over ecological preservation (Itishan et al., 2025). This inevitably then includes many multidimensional aspects that affect the environment and humans. Therefore, Environmental Management in mining strategically still needs to consider the concept of trust and justice as an important instrument of Fiqh Al-Bi'ah. Thus, through the integration of this concept, an Integrated Eco-Justice Framework can be realized, which is based on the nature of human reality and prioritizes morality. At the point of destination, it will boil down to maintaining human honor (*karomah insaniyyah*), which is an important aspect in the pillars of *Maqashid Sharia*. As asserted by Bisri et al., (2013), according to Yusuf Qardhawi, maintaining the environment is equal to maintaining aspects of the pillars of *Maqashid Sharia*, namely maintaining religion (*din*), soul (*nafs*), intellect (*aql*), offspring (*nasl*), and property (*mal*). This study argues that environmentally friendly nickel governance requires the application of an Integrated Eco-Justice Framework through Fiqh Al-Bi'ah, which holds that our actions as humans should not damage the surrounding environment, manage natural resources with balance (*tawazun*), and uphold the principle of "wasatiyyah" (moderation) with full mandate (responsibility and justice).

CONCLUSION

This study shows that nickel mining in eastern Indonesia results in systematic environmental degradation such as deforestation, water and soil pollution, and emissions that lead to environmental insecurity for local communities. In addition, this mining moves through the structural pattern mechanism of global extractivism that runs through economic and political power relations. By adopting the perspective of ecological imperialism, this study unravels the structural roots of resource exploitation that place accumulated profits in the hands of central actors. In contrast, society bears the ecological burden, and environmental security reveals how this process creates

multidimensional threats to ecosystems and human well-being. Furthermore, Fiqh Al-Bi'ah offers a normative basis for assessing mining management using the principles of amanah, maslahah, 'adl, tawazun, and human dignity.

Merging these three perspectives yields an Integrated Eco-Justice Framework as a conceptual contribution of this study. The framework extends the study of environmental security in international relations by linking structural analysis, security assessment, and ethical evaluation in one comprehensive approach. This framework further provides a conceptual foundation for the development of policies that are more oriented to environmental justice and sustainability in the management of the mining industry. In practice, the results of the study emphasize that nickel mining management should not only focus on economic growth. However, they should also ensure ecological justice, environmental sustainability, and protection for local communities. Future research could test this framework through field research or compare it to extractivism practices in other important mineral-producing countries.

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