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Article

Islamic Ecotheology and the Moral Responsibility of *Khalifah fi al-Ardh* as the Foundation for Degraded Land Management in Ponorogo: Integrating the Islamic Worldview on Environmental Sustainability

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ABSTRACT

Ponorogo Regency faces a significant environmental challenge in the form of critical land degradation, which not only reduces soil productivity and water resources but also increases the risk of landslides and floods. This issue reflects a broader spiritual and moral crisis, as humans have neglected their role as khalīfah (stewards) entrusted with maintaining balance (mīzān) in God's creation. This study employs library research and content analysis of primary and secondary sources, including books, scholarly journals, and government reports, using the theoretical frameworks of Seyyed Hossein Nasr's Islamic Ecotheology and Fazlun Khalid's Islamic Stewardship Theory. The research examines the ethical, spiritual, and ecological values embedded in Islamic teachings and interprets how they can be applied to practical land rehabilitation efforts. The results are: (1) Ponorogo faces a critical land crisis exceeding 16,000 hectares, necessitating rehabilitation that restores ecological functions while reinforcing spiritual and ethical awareness; (2) the modern environmental crisis reflects a moral and spiritual imbalance, where humans must recognize their responsibility as guardians rather than conquerors of nature, integrating ecological stewardship with worship and obedience to Allah; (3) degraded upland and riverhead areas totaling about 29,295 hectares (20% of the regency) demonstrate the application of ecotheological principles through reforestation, terracing, and community-pesantren based forest management, supported by ecotheological education, fostering a collective spiritual-ecological ethic in Ponorogo.

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INTRODUCTION

The environment serves as the habitat for all living beings, including humans, animals, and plants. Throughout the course of life, all living organisms, humans in particular, interact with one another and their surroundings to meet their essential needs. For humans, this

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interaction with nature is not only aimed at survival but also at utilizing natural resources to advance civilization and improve the quality of life. However, when such interactions are not managed wisely, the balance of ecosystems can be disrupted, leading to various forms of environmental degradation, one of which is critical land. Critical land refers to areas, whether inside or outside forest zones, that have suffered physical, chemical, or biological damage, resulting in the loss of their ecological functions. This condition is typically characterized by decreased productivity and reduced environmental protection capacity (Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor 23 Tahun 2021 tentang Pelaksanaan Rehabilitasi Hutan dan Lahan, 2021).

One of the regions facing the issue of critical land is Ponorogo Regency. The Ponorogo District Government has recorded approximately 16,697.24 hectares of critical land distributed across 21 sub-districts (Eka Wulan, 2025). This condition requires serious attention from all elements of society. If critical land is not promptly rehabilitated, it may lead to a decline in the quality of the ecosystem within the affected area.

The impacts of critical land in Ponorogo have been directly experienced by the local community. Phenomena such as water scarcity during the dry season, rising air temperatures, and crop failures indicate that land degradation has affected both environmental balance and the community's quality of life. According to available data, in 2024, 546 households in Ponorogo were affected by a clean water crisis during the dry season (Charolin Pebrianti, 2024).

One of the main factors driving various environmental phenomena is human negligence toward the preservation of nature. The ongoing environmental crisis is not only caused by destructive human activities, such as land conversion, overexploitation of natural resources, and unsustainable development, but also shaped by the underlying human worldview toward nature. Within the Islamic worldview, nature is regarded as an integral part of the Divine system that reflects the principles of *tawḥīd* (oneness of God) and *mīzān* (balance). Therefore, efforts to control and rehabilitate critical land should be grounded in theological awareness that preserving the earth is a manifestation of human spiritual responsibility as khalīfah (stewards) on earth.

This theological awareness must be manifested through concrete actions aimed at restoring and improving environmental conditions. One practical measure that can be undertaken is land rehabilitation. Land rehabilitation refers to efforts to restore, maintain, and enhance the functions of land and forests so that their carrying capacity, productivity, and role in supporting the life-support system can be sustained (Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor P.105/MENLHK/SETJEN/KUM.1/12/2018 tentang Tata Cara Pelaksanaan, Kegiatan Pendukung, Pemberian Insentif, serta Pembinaan dan Pengendalian Kegiatan Rehabilitasi Hutan dan Lahan, 2018). Land rehabilitation is carried out with the expectation that critical land can be transformed into productive areas that generate positive impacts for the community. The rehabilitation process employs two main approaches: vegetative conservation and civil-technical conservation. Vegetative conservation can be implemented through reforestation, which aims to strengthen land structure, while civil-technical conservation can be realized through the construction of infiltration wells, intended to regulate and manage groundwater (Indrihastuti dkk., 2016).

The rehabilitation of critical land aligns with the principles of Islamic ecotheology and the fulfillment of the divine mandate of humans as khalīfah fī al-arḍ (stewards on earth), as stated in Qur'an Surah Al-Baqarah [2]:30. This mandate encompasses three dimensions, spiritual, ethical, and ecological. Therefore, the concrete manifestation of fulfilling this divine trust is managing the environment through a tawḥīdic perspective, which emphasizes the unity of God and the interconnectedness of all creation (Widiastuty & Anwar, 2025).

Studies on Islamic ecotheology have been extensively explored by scholars such as Seyyed Hossein Nasr and Fazlun M. Khalid; however, most of these discussions remain at the conceptual level and have yet to address their practical application in the context of local environmental conservation. On the other hand, research on land rehabilitation in Ponorogo has largely emphasized technical and administrative approaches, without incorporating theological foundations as ecological ethics that inspire community participation. This gap indicates that Islamic ecotheological discourse has not yet been positioned as a practical framework in critical land management policies. Therefore, this study seeks to fill that gap by examining the concept of *khalīfah fī al-arḍ* as an ethical and spiritual foundation for critical land rehabilitation efforts in Ponorogo.

METHOD

The research employed a library research, utilizing content analysis of both primary and secondary sources, including books, scholarly journals, and government reports relevant to the themes of Islamic ecotheology and critical land rehabilitation in Ponorogo. Data were analyzed using content analysis techniques within the theoretical frameworks of Seyyed Hossein Nasr's Islamic Ecotheology and Fazlun Khalid's Islamic Stewardship Theory. Through these frameworks, the researcher sought to interpret the spiritual, ethical, and ecological values embedded in Islamic teachings.

The analysis involved identifying key themes related to *tawḥīd* (divine unity), *amānah* (trusteeship), and *mīzān* (balance), which were then qualitatively interpreted using a theological-ecological approach. The thematic categorization was based on two ecotheological frameworks: the metaphysical sacredness of nature (Nasr) and Islamic stewardship ethics (Khalid). The data were subsequently interpreted to explore how these theological values can be translated into practical efforts for critical land rehabilitation in Ponorogo.

RESULT AND DISCUSSION

Degraded Land and the Islamic Ecotheological Perspective in Ponorogo

Official data and technical surveys indicate that Ponorogo Regency is facing a significant issue of critical land degradation. According to reports from the Ponorogo District Government and coverage from local media, the total area of critical land was recorded at 16,697.24 hectares (ha) in the 2025 report (Eka Wulan, 2025). This condition has been aggravated by land fires covering approximately 4,280.03 hectares during the dry season of 2024. A technical survey conducted by the Bengawan Solo Watershed Management Agency (BPDAS), as cited in the Environmental Monitoring Report (DIKPLHD), provides more detailed data that 2,605.94 ha were classified as critical land, 8,378.01 ha as potentially critical land, and 18,311.82 ha as severely critical land. Collectively, these categories account for 20.32% of Ponorogo Regency's total area according to the survey aggregation. This situation has also affected water availability. Of the 764 recorded natural springs in Ponorogo, many have experienced a significant decline in discharge rates or have completely dried up, thereby increasing the risk

of landslides and flooding in several sub-districts (Dinas Lingkungan Hidup Kabupaten Ponorogo, 2021).

Table 1. Condition of land in Ponorogo Regency

Severely Critical Land (BPDAS Bengawan Solo, 2020)	18,311.82 ha
Critical Land (BPDAS Bengawan Solo, 2020)	2,605.94 ha
Potentially Critical Land (BPDAS Bengawan Solo, 2020)	8,378.01 ha
Total Category (Severely Critical + Critical + Potentially Critical)	29,295.77 ha
Critical Land (Data reported by the Ponorogo District Government, 2025)	16,697.24 ha
Percentage of Affected Area (BPDAS, 2020)	20.32% of the Regency's Total Area
Percentage of Affected Area (Ponorogo District Government, 2025)	12.92% (as reported by the District Government)
Number of Recorded Natural Springs	764 Natural Springs (many experiencing a decline in discharge rates)

Source: (Dinas Lingkungan Hidup Kabupaten Ponorogo, 2021)

The ecological conditions in Ponorogo indicate that the environmental crisis is not merely a technical issue of land management, but also reflects humanity's worldview toward nature. The ongoing decline in land function, reduction of water resources, and degradation of environmental quality signify a fundamental imbalance in the relationship between humans and nature.

This phenomenon raises essential questions about the root causes of the ecological crisis and how humans ought to perceive nature. Seyyed Hossein Nasr explains that the ecological crisis does not stem from the advancement of science itself, but rather from a secular worldview that has removed God from the fabric of worldly life.(Imran, 2023) The modern environmental crisis stems from the loss of humanity's spiritual awareness of the sacredness of nature. The secular worldview has separated scientific knowledge from divine values, leading to the treatment of nature merely as a material object to be exploited.

In Islam, nature is viewed as a manifestation of God's greatness (*āyāt kauniyyah*), affirming His power and authority. These signs of divine greatness reflect two essential principles: *tawḥīd* (unity of God) and *mīzān* (balance). Preserving the earth is not only an ecological responsibility but also a spiritual mandate of humans as *khalīfah* (stewards) on earth. Seyyed Hossein Nasr explains that genuine sustainability can only be achieved when science and technology are reoriented toward theological consciousness, recognizing that every effort to protect nature is an act of devotion to the Creator (Imran, 2023).

Sustainability is an essential aspect of Islamic teaching, embodied in the concepts of *amānah* (trusteeship) and *khalīfah* (stewardship) (Bsoul dkk., 2022). Islam perceives environmental preservation not merely as a social responsibility but as a religious obligation rooted in the Qur'an and Sunnah. The values of *wasatiyyah* (moderation), balance in consumption, and the prohibition of *fasād* (destruction or corruption) serve as moral foundations that align with the global Sustainable Development Goals (SDGs) (Faisal, 2024).

The issue of critical land in Ponorogo requires not only technical solutions but also a renewed worldview that perceives nature as a divine trust (*amānah Ilāhiyyah*). Environmental degradation reflects the weakening of humanity's spiritual awareness of the principle of *mīzān*

(cosmic balance). Therefore, land rehabilitation efforts should be understood as an expression of human religious and moral responsibility as *khalīfah* (stewards) on earth. When ecological actions such as reforestation and soil management are carried out with theological consciousness, it is hoped that they will foster a deeper integration between scientific knowledge and Islamic values in promoting environmental sustainability.

Islamic Ecotheology and the Concept of *Khalīfah fī al-Arḍ*

The modern environmental crisis is reflected not only in physical degradation such as deforestation but also in the weakening of humanity's spiritual connection with nature. This condition calls for an approach that integrates moral and theological dimensions alongside ecological considerations in maintaining the balance of the earth.

Seyyed Hossein Nasr's perspective serves as a crucial foundation for understanding the direction of contemporary Islamic ecotheology (Nasr, 1996). Nasr explains that the environmental crisis faced by the modern world is not merely ecological in nature but rooted in a spiritual crisis and the loss of human awareness of the sacredness of nature. He views nature as a manifestation of the Divine presence, reflecting the principle of tawḥīd, the unity between God, humanity, and all of creation. Within this perspective, humans hold the role of *khalīfah* (stewards) who are responsible for maintaining *mīzān* (balance) and preserving cosmic order in accordance with the will of God. Jacques Waardenburg further emphasizes the importance of understanding Islam not merely as a normative system of teachings but also as a living and dynamic reality continuously interpreted and practiced by its adherents (Waardenburg, 2012). This perspective provides an essential framework for understanding how the concept of Islamic ecotheology articulated by Nasr can be translated into practical, everyday life. It encourages a way of living that integrates spiritual consciousness, ethical responsibility, and ecological awareness, positioning environmental care not merely as a technical obligation but as a manifestation of faith and devotion to the Creator.

Complementing Nasr's view, Khalid highlights how the modern anthropocentric paradigm, which places humans at the center of existence, has contributed to environmental degradation by diverting humanity from its spiritual responsibility to maintain the balance of the universe.(Fazlun M. Khalid dkk., 2006) Khalid refers to Qur'anic principles that affirm creation as being founded upon order and balance (*mīzān*), while assigning humanity the role of *khalifah* to preserve that harmony. Within the framework of Islamic ecotheology, Khalid emphasizes that humanity's duty is not to dominate nature, but to fulfill the divine trust (*amānah*) by protecting and caring for it as an expression of obedience to Allah (Siddiqi, 1993). Khalid links environmental degradation to the moral and spiritual crisis arising from the modern paradigm that places humanity at the center of all things (anthropocentrism).

The views of thinkers such as Nasr and Khalid emphasize that environmental preservation in Islam must originate from a theological awareness of humanity's role on earth. This awareness is embodied in the concept of *khalifah fi al-ardh*, which positions humans not merely as users of natural resources but as guardians of the balance within God's creation. The concept provides an ethical and spiritual foundation for ecological actions oriented toward sustainability.

Understanding *khalifah fi al-ardh* as a form of spiritual consciousness places humanity as a being entrusted with the responsibility to care for the Earth (Rakhmat, 2022). The

relationship between humans and nature is symbiotic, when humans protect nature, nature in turn provides for their needs. Environmental degradation often arises when humans exploit natural resources excessively without regard for environmental ethics (Djuned, 2023). *Khalifah fi al*-ardh is not a symbol of human dominion over the earth, but rather the manifestation of a divine trust (*amanah*) to protect, preserve, and maintain the balance of nature as an act of worship to Allah (Nasr, 1996).

The concept *of khalifah fi al-ardh* positions humans as guardians rather than conquerors of the earth. This divine calls for maintaining *mīzān*, a balance between human needs and ecological sustainability, so that environmental conservation becomes an integral expression of *tawhid* (relation with Allah, *muamalah ma'allah*) and social worship (relation with human, *muamalah ma'annas*). Therefore, human stewardship over nature is theocentric in nature, grounded in the awareness that every interaction with the environment is an act of obedience to Allah.

Implementation of Ecotheological Values in Land Rehabilitation

Environmental degradation in Ponorogo, particularly the expanding areas of degraded land in the upland and riverhead regions, reflects an ecological issue closely tied to the moral and spiritual dimensions of human life. According to the survey conducted by the Bengawan Solo Watershed Management Agency (BPDAS) in 2020, approximately 29,295 hectares were classified as critical to severely critical land, accounting for about 20% of the total area of the regency (Dinas Lingkungan Hidup Kabupaten Ponorogo, 2021). This condition not only reduces soil productivity but also leads to a decline in spring discharge and increases the risk of landslides and flooding.

Nasr, in his theory of Islamic ecotheology, explains that environmental degradation stems from the loss of human awareness of the sacredness of nature as part of the divine signs (*ayat kauniyyah*) (Nasr, 1996). Nature is not merely an object to be exploited for economic purposes but a creation of God that possesses the right to be protected.

According to Nasr, the concept of *khalifah fi al-ardh* emphasizes that humans bear a moral and spiritual responsibility to maintain harmony on earth. The role of the *khalifah* is not an expression of authority over nature, but a divine mandate (trust) to care for and preserve God's creation as an act of devotion to Him. This awareness positions every human action toward the environment as part of worship that carries ethical and transcendental dimensions. Land rehabilitation thus becomes a concrete manifestation of this divine trust, where humans actively participate in restoring the ecological balance that has been disrupted.

Khalid further elaborates in his Islamic Stewardship Theory that humans are the stewards (*khulafā'*) of the earth, entrusted with a divine responsibility to maintain balance (*mīzān*) and prevent destruction (*fasād*). This trust implies that humans are not the owners of the earth, but beings charged with ensuring the sustainability of ecosystems. In Ponorogo, this principle can be practically implemented through various land rehabilitation programs, such as planting local vegetation suited to the topography, constructing terraces on steep slopes, and strengthening community and pesantren based forest management initiatives.

The spirit of *khalifah fi al-ardh* can be fostered through ecotheological education at the community level, particularly within mosques and *madrasahs* (Islamic schools) (Ahnaf & Sholahuddin Al Ayubi, 2025). Through sermons, study sessions, and collective greening

activities, the community can cultivate the awareness that protecting the land, water, and trees is a form of worship and gratitude to Allah. This principle broadens the perspective that land rehabilitation is not merely the responsibility of the government but also a collective duty of all humans as khalīfah on earth.

The ecotheological values taught by Nasr and Fazlun Khalid provide a philosophical and ethical foundation for practical efforts to address critical land in Ponorogo. Land rehabilitation thus becomes a spiritual-ecological movement that integrates scientific knowledge, environmental policy, and religious awareness. Humans are not only restoring degraded land but also repairing their relationship with God and nature.

A contextual and practical implementation model is needed to ensure that ecotheological values do not remain merely normative. This can be realized through four main strategies: (1) mosque-based reforestation serving as centers for ecological education and action; (2) strengthening theological literacy through sermons (*khutbah*) and study circles (*majlis taklim*) that emphasize environmental stewardship as a manifestation of *khalifah fi al-ardh*; (3) revitalization of community forests through the active participation of pesantrens and local communities; and (4) development of a tauhid-based conservation ethic, which views land rehabilitation as an act of worship and obedience to Allah.

In addition to community- and institution-based initiatives, the implementation of Islamic ecotheological values can also begin within the household environment as the smallest social unit that plays a strategic role in fostering ecological awareness. Families, as representatives of *khalīfah fī al-arḍ*, can fulfill their ecological responsibilities through simple yet meaningful actions, such as sorting and managing household waste, utilizing organic waste for composting, reducing single-use plastics, conserving water and electricity, and planting trees or medicinal herbs in home gardens. These activities embody the application of the values of *amānah* (trusteeship) and *mīzān* (balance) in daily life, making environmental preservation an integral part of personal piety and everyday worship (*'ibādah al-yaumiyyah*). Thus, household-level ecological practices not only support broader community-based conservation efforts but also strengthen individual spirituality and morality in realizing harmony between humans, nature, and God, as reflected in the principle of *tawḥīd*.

CONCLUSION

Ponorogo faces a significant critical land crisis, with over 16,000 hectares affected, leading to reduced soil productivity, declining water resources, and increased risks of landslides and floods. This environmental degradation reflects not only technical challenges but also a spiritual crisis, as humans have neglected their role as khalīfah responsible for maintaining the balance (*mīzān*) of God's creation. Land rehabilitation, approached through ecological action integrated with Islamic principles of *amānah* and stewardship, offers a pathway to restore both ecological function and spiritual-ethical awareness.

The modern environmental crisis reflects not only physical degradation, such as deforestation, but also a weakening of humanity's spiritual connection with nature. Thinkers like Nasr and Khalid emphasize that this crisis stems from a spiritual and moral imbalance, where humans have neglected their role as khalīfah entrusted with maintaining *mīzān* (balance) and fulfilling the divine trust (*amānah*) over creation. Understanding humans as guardians rather than conquerors fosters a theocentric ecological ethic, integrating spiritual consciousness, ethical responsibility, and environmental stewardship as acts of worship and devotion to Allah.

Degraded land in Ponorogo's upland and riverhead areas highlights an ecological problem intertwined with human moral and spiritual responsibility, with about 29,295 hectares classified as critical to severely critical, representing 20% of the regency. Nasr explains that such environmental degradation stems from the loss of awareness of nature's sacredness, while the concept of *khalifah fi al-ardh* frames humans as stewards entrusted to maintain mīzān and care for creation as an act of worship. Khalid emphasizes that humans are not owners but guardians of the earth, and in Ponorogo, this principle is implemented through reforestation, terracing, and community- and pesantren-based forest management, supported by ecotheological education in mosques and Islamic schools, fostering a collective spiritual-ecological ethic where land rehabilitation is both a practical and devotional responsibility

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