

Spirit of the Kyoto Protocol for Environmental Sustainability: An Islamic Perspective

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ABSTRACT

This study presents the spirit embodied in the Kyoto Protocol agreement, as a global call to industrialized countries regarding climate change, to collectively agree and take responsibility for ensuring the sustainability of life on Earth by regulating and reducing carbon emissions so that the natural ecosystem remains preserved and balanced. The main subject of life on Earth is human beings; therefore, the beneficiaries of the Kyoto Protocol are all of humanity. This aligns with Islamic teachings, which position humans as holders of successive authority of Allah on Earth, tasked with preserving and prospering the planet. Islam, through its teachings, provides moral and spiritual guidance to humanity to protect ecosystems and sustain life on Earth. These teachings aim to uphold values and apply them in life to establish a balance between physical, social, economic, moral, and spiritual aspects. This study shows a clear connection between the spirit of the Kyoto Protocol and the spirit of Islamic teachings concerning the command to preserve the Earth.

Keywords: Kyoto Protocol, climate change, environment, earth, Islamic teaching.

INTRODUCTION

One of the most serious problems currently facing the global community is the issue of climate change, which has a significant impact on the global ecosystem and affects human life broadly. Climate change leads to rising air temperatures and sea levels as consequences of global warming. This situation is considered an anomaly, as nature loses its natural characteristics and deteriorates, resulting in harmful effects on the sustainability of the environment and the well-being of all living beings on Earth, including humans.

Theoretically, there are several factors causing climate change and global warming, which in general may be due to natural disasters or human activities. From an Islamic perspective, much of the destruction on Earth is caused by human actions, whether through intentional exploitation of nature or unintended actions leading to technical accidents, or even due to purely natural disasters.

At the international level, the global community has also shown concern for the importance of limiting exploitative activities toward nature, and reducing industrial activities that generate waste and carbon-based air pollution. Therefore, international agreements have been established to restrict and control activities that cause environmental degradation. These agreements also aim to promote social and economic justice for the global population, particularly between large industrial nations and smaller countries. One such agreement was established under the United Nations through the United Nations Framework Convention on Climate Change (UNFCCC), a key global treaty aimed at coordinating international responses to climate change. This treaty later laid the foundation for the creation of subsequent legal instruments.¹

¹ United Nations Climate Security Mechanism Bridging Climate Action, Peace and Security (2023) "About the United Nations Framework Convention on Climate Change." <https://www.un.org/climatesecuritymechanism/en/united-nations-framework-convention-climate-change-unfccc-and-climate-peace-and-security>

In December 1997, the UNFCCC issued the Kyoto Protocol, which officially came into effect in February 2005. This agreement was, of course, created in the interest of environmental sustainability and the survival of humanity, although it has faced challenges in implementation. Nevertheless, the spirit and goals it upholds deserve attention and should be continued or replaced by other agreements to bind various parties in their commitment to preserving the environment for the benefit of humankind.

On another level, Islam as a universal religion also pays serious attention to environmental conservation and the preservation of life on Earth, particularly for human beings. These teachings are found in the Quran, which states that humans are *khalifah* of Allah, meaning beings who are given a mandate and bear the responsibility to manage and preserve nature, and to prosper the Earth.

The research question in this study is: What is the spirit embedded in the Kyoto Protocol in relation to environmental sustainability, when viewed from the Islamic perspective?

Based on this question, the study aims to explore the objectives of the Kyoto Protocol in realizing environmental sustainability on Earth through an interpretative analysis from an Islamic point of view. To answer this research question, textual evidence from Islamic sources will be presented, along with interpretations by *mufasssir*—scholars who are well-versed in understanding the meanings contained within these texts.

The findings of this study are expected to contribute to raising awareness of environmental preservation through an interdisciplinary approach, both by understanding international regulations and through comprehension of religious teachings.

LITERATURE REVIEW

A preliminary review was conducted using various sources and research findings related to environmental issues and conservation efforts, obtained from books, reports, and journal articles.

Andreja Cirman, in a report titled “*The Kyoto Protocol in a Global Perspective*”, states that the Kyoto Protocol aims to reduce global carbon gas emissions by involving both industrialized and developing countries in its implementation. Although it has succeeded in raising global awareness about carbon emissions, the protocol cannot yet be considered fully successful due to the many obstacles experienced by various countries.²

Nada Maamoun, in the article “*The Kyoto Protocol: Empirical Evidence of a Hidden Success*”, notes that many international environmental agreements have been made, with their numbers increasing over recent decades. However, their effectiveness remains controversial—some view them as successful, others as failures. The Kyoto Protocol, as one of the most ambitious international agreements on climate change, has faced criticism since its initial design, and its effectiveness has been questioned.³

Heidy Jane et al., in their article “*Permasalahan dalam Pelaksanaan Tiga Mekanisme Fleksibel dalam Protokol Kyoto*” (*Problems in Implementing the Three Flexible Mechanisms of the Kyoto Protocol*), conclude that the Kyoto Protocol seeks to reduce emissions through three mechanisms: Emission Trading (ET), Joint Implementation (JI), and the Clean Development Mechanism (CDM). However, ET has been exploited for financial gain, JI is hindered by diverse regulations, and CDM faces issues of inconsistency and fraud. These problems have impeded emission reduction targets, highlighting the need for stronger commitment and thorough evaluation to effectively combat climate change.⁴

² Andreja Cirman et al., “The Kyoto Protocol in a Global Perspective,” *Economic and Business Review* 11, no. 1 (2009), <https://doi.org/10.15458/2335-4216.1259>.

³ Nada Maamoun, “The Kyoto Protocol: Empirical Evidence of a Hidden Success”, *Journal of Environmental Economics and Management*. Volume 95, May 2019, p. 227-256. <https://doi.org/10.1016/j.jeem.2019.04.001>

⁴ Heidy Jane et al., “Permasalahan Dalam Pelaksanaan Tiga Mekanisme Fleksibel dalam Protokol Kyoto,” *Bina Hukum Lingkungan* 3, no. 1 (2018): 13–33, <https://doi.org/10.24970/jbhl.v3n1.2>.

Firdaus M. Iqbal et al., in a study titled “*Pengaturan Emisi Gas Rumah Kaca Berdasarkan Protokol Kyoto dan Implementasinya di Indonesia*” (*Regulation of Greenhouse Gas Emissions Based on the Kyoto Protocol and Its Implementation in Indonesia*), conclude that the Kyoto Protocol is an international legal instrument for reducing greenhouse gas emissions. Indonesia, as a signatory, implements its provisions through the Clean Development Mechanism (CDM) and REDD (*Reducing Emissions from Deforestation and Forest Degradation*) programs. However, implementation in Indonesia remains suboptimal due to issues such as fake Certified Emission Reductions (CERs), unqualified private companies, and poor coordination between national and sub-national levels in the REDD program.⁵

Environmental issues at the global level have been a serious concern since the 1970s. At that time, the international community began to realize the importance of sustainable management of natural resources. In 1972, the Stockholm Conference was held, resulting in an international agreement on environmental protection.⁶ The agreement, known as the Stockholm Declaration, stated that every human has the right to live in a healthy environment, and that every country is responsible for protecting the environment.⁷ Since then, environmental issues have received widespread attention, leading to many international conferences. In 1997, the Kyoto Protocol was adopted and came into effect in 2005. This agreement is a product of the UNFCCC, a UN body focused on climate change.⁸ The agreement recognizes climate change as a global threat and calls for action to reduce greenhouse gas emissions.⁹ The Kyoto Protocol was designed with the primary goal of lowering carbon emissions and imposing obligations on industrial countries that have the potential to cause environmental pollution.

Meanwhile, Islam places humans as *khalifah* entrusted with the mandate to protect and prosper the Earth. Islam urges its followers not to cause damage on Earth and encourages them to learn from nature, both on land and at sea.

The Quranic verse in Surah Al-Rum (30): 41 states: “Corruption has appeared on land and sea because of what people’s hands have earned. So, He (Allah) may let them taste some of what they have done, that they may return (to righteousness).”

It is stated that the emergence of destruction on Earth is the result of human actions, and subsequently, humans themselves experience its consequences. In the verse, the term *fasad* (corruption or destruction) is used to describe damage occurring on Earth, both on land and at sea. The Tafsir from the Ministry of Religious Affairs (Indonesia) interprets this as referring to environmental and social destruction—such as the exploitation of nature, pollution, and even the devastation of flora, fauna, and marine life—resulting in the Earth and its environment becoming uninhabitable or unusable. Meanwhile, social corruption (*fasad*) can occur through acts such as robbery, murder, rebellion, warfare, and the like. However, the consequences felt by humanity are not total, but partial, in the hope that people will become aware and take responsibility for protecting the Earth, ceasing to cause further destruction.¹⁰

Wahbah al-Zuhayli, in his interpretation of the verse, explains that destruction and deviation have indeed occurred in the world—there is an increase in evil and a decrease in benefits, crop failures, reduced fruit

⁵ Firdaus Muhamad Iqbal and Neni Ruhaeni, “Pengaturan Emisi Gas Rumah Kaca Berdasarkan Protokol Kyoto dan Implementasinya di Indonesia,” *Jurnal Dinamika Global* 7, no. 2 (2022).

⁶ Günther Handl, “Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), 1972 and the Rio Declaration on Environment and Development, 1992 - English,” *United Nations Audiovisual Library of International Law*, 2012, 1–11.

⁷ Johan Rockström et al., “Planetary Boundaries: Exploring the Safe Operating Space for Humanity,” *Ecology and Society* 14, no. 2 (2009).

⁸ Daniel Murdiyarso, “International Review for Environmental Strategies Special Feature on the Kyoto Protocol Implications of the Kyoto Protocol: Indonesia’s Perspective,” vol. 5, 2004.

⁹ Firdaus Muhamad Iqbal and Neni Ruhaeni, “Pengaturan Emisi Gas Rumah Kaca Berdasarkan Protokol Kyoto Dan Implementasinya Di Indonesia,” *Jurnal Dinamika Global* 7, no. 2 (2022).

¹⁰ Kementerian Agama RI. 2020. *Al-Qur’an dan Tafsirnya*. Volume VII, p. 514-515.

production, lack of rainfall, drought, and famine. All of these, he states, are caused by the evil, sins, and violations committed by humans. This includes acts of disbelief, injustice, desecration of sanctity, hostility toward religion, a lack of piety, and violations of others' rights and property. As a result, Allah sends punishment and suffering, so that people may feel the consequences of their deeds and, hopefully, return from their mistakes and transgressions.¹¹

Fakhruddin al-Razi, in interpreting Quran Surah Al-Rum (30:41), states that the cause of destruction on land and sea is *shirk* (associating partners with Allah). This destruction may take the form of hurricanes, drought in parts of the Earth, or the turning of fresh water into salt water. In other words, environmental damage caused by human manifests in various disasters that bring about problems and difficulties for human life.¹²

A similar message is found in Surah Al-A'raf (7:56), which warns humans not to spread corruption on the Earth after it has been created in a state of balance and harmony. The verse provides a warning to humankind to preserve the Earth's sustainability. It even links human obedience in caring for nature to the mercy of Allah. This verse is also relevant to current environmental issues, such as pollution and the exploitation of natural resources.

The prohibition against causing destruction mentioned in the verse includes both material and substantial damage. This encompasses harm to life, sources of livelihood, and the environment. Allah has created the Earth and its components—mountains, valleys, rivers, seas, and land—all of which are intended for human use.¹³

Wahbah al-Zuhayli, in *Al-Tafsir al-Munir*, states that avoiding destruction on Earth is a command that must be obeyed, just like the command to worship and submit to God. The message of the verse is that humans should not ruin the Earth, which has been carefully preserved by wise individuals from previous generations who sincerely maintained the environment, both in its material and spiritual dimensions.¹⁴

Meanwhile, Fakhruddin al-Razi, in his *Tafsir Mafatih al-Ghayb*, mentions that Islam prohibits humans from causing destruction in a very broad sense. This includes murder, theft, religious deviation, sexual misconduct such as LGBT behavior, and the consumption of intoxicating substances. These prohibitions align with the five fundamental principles of goodness in Islam: life (soul), wealth, lineage, religion, and intellect.¹⁵

RESEARCH METHOD

This study employs a qualitative method using secondary data, which consists of materials available in books, journals, and reports from researchers or research institutions that have been published, as well as other sources through literature review. To answer the research question, a semantic analysis is conducted from an Islamic perspective, based on the Quran, hadith, and other authoritative Islamic sources.

FINDINGS AND DISCUSSION

Humans and the natural environment are two inseparable entities — interrelated and interdependent. As both individual and social beings, humans need a healthy environment to enjoy a good quality of life. At the same time, the environment requires the presence and care of humans to ensure its sustainability and continuity.

¹¹ Al-Zuhayli, Wahbah. 2018. *Al-Tafsir al-Munir fa al-Aqidah wa al-Shari'ah wa al-Manhaj*. Beirut: Dar al-Fikr. Volume 11, p. 107.

¹² Al-Razi, Fakhruddin. 2003. *Al-Tafsir al-Kabir aw Mafatih al-Ghayb*. Cairo: Al-Maktabah al-Tawfiqiyah. Volume 13, p. 111.

¹³ Kementerian Agama RI. 2020. *Al-Qur'an dan Tafsirnya*. Volume III, p. 364-365.

¹⁴ Al-Zuhayli, Wahbah. 2018. *Al-Tafsir al-Munir fa al-Aqidah wa al-Shari'ah wa al-Manhaj*. Beirut: Dar al-Fikr. Volume 4, p. 606.

¹⁵ Al-Razi, Fakhruddin. 2003. *Al-Tafsir al-Kabir aw Mafatih al-Ghayb*. Cairo: Al-Maktabah al-Tawfiqiyah. Book 7, Volume 14, p. 119.

Human needs in utilizing the environment continue to increase, inevitably leading to exploitative actions toward nature. This includes the development of industries that produce waste on land, in water, and in the air — all of which contribute to global warming and lead to climate change.

Background and Spirit of the Kyoto Protocol

Environmental damage has existed since ancient times, but it did not receive much attention from the global community. It was not until around the 1970s that international awareness and efforts to address environmental issues began to emerge, along with a growing recognition of the importance of sustainable natural resource management. The Stockholm Conference in 1972 marked the beginning of global cooperation on environmental protection.¹⁶ It produced the Stockholm Declaration, which recognized the right of every human to live in a healthy environment and affirmed the responsibility of every nation to protect and preserve it.¹⁷

Global environmental concern continued to expand, eventually leading to the adoption of the Kyoto Protocol in 1997, which came into force in 2005. This agreement was part of the United Nations Framework Convention on Climate Change (UNFCCC), established at the 1992 Earth Summit in Rio de Janeiro.¹⁸ Climate change was recognized as a serious issue and a global threat, prompting the convention to call for the reduction of greenhouse gas emissions.

The Kyoto Protocol was designed with the main objective of achieving global climate stability by reducing and eliminating greenhouse gas emissions,¹⁹ which are the main contributors to global warming. The protocol places obligations primarily on industrialized nations, which are the main contributors to carbon emissions through their industrial activities, leading to environmental pollution.

To achieve this goal, the Kyoto Protocol targets the reduction of six greenhouse gases that contribute to global warming: Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Sulfur hexafluoride (SF₆), Chlorofluorocarbons (CFCs), Perfluorocarbons (PFCs).²⁰ These gases increase the greenhouse effect in the Earth's atmosphere, as carbon emissions accumulate and forests (which absorb them) diminish, the Earth's condition begins to resemble a greenhouse — where the internal temperature is much hotter than the external environment.

The Kyoto Protocol is based on two main principles: the common but differentiated responsibilities principle (all parties share the same responsibility, but to different extents in terms of greenhouse gas emission reduction targets), and the precautionary principle (which encourages all countries to act cautiously in addressing carbon emission issues).²¹ The common but differentiated responsibilities principle recognizes that all countries share a common responsibility in addressing climate change, but the level of responsibility varies greatly depending on each country's circumstances and capacity.

Developed countries, which have historically contributed more to greenhouse gas emissions since the Industrial Revolution, bear a greater responsibility compared to developing nations. Meanwhile, the precautionary

¹⁶ Günther Handl, "Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), 1972 and the Rio Declaration on Environment and Development, 1992 - English," *United Nations Audiovisual Library of International Law*, 2012, 1–11.

¹⁷ Johan Rockström et al., "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," *Ecology and Society* 14, no. 2 (2009).

¹⁸ Daniel Murdiyarso, "International Review for Environmental Strategies Special Feature on the Kyoto Protocol Implications of the Kyoto Protocol: Indonesia's Perspective," vol. 5, 2004.

¹⁹ "Protokol Kyoto: Komitmen Dunia dalam Misi Menyelamatkan Bumi". *Lindungi Hutan*. 20/11/2022. <https://lindungihutan.com/blog/protokol-kyoto-dan-mekanismenya/>

²⁰ Josephine Nwanneka Okoli and Amaechi Comfort Ifeakor, "An Overview of Climate Change and Food Security: Adaptation Strategies and Mitigation Measures in Nigeria," *Journal of Education and Practice* 5, no. 32 (2014): 13–20, www.iiste.org.

²¹ Diogenes, "Prinsip-Prinsip Yang Terdapat Di Dalam Konvensi Dan Protokol Perubahan Iklim Dan Tanggung Jawab Negara-Negara Khususnya Negara Maju," *Justitia Jurnal Hukum*, Vol 4, no. 1 (April 2020): 39–56.

principle emphasizes that actions to prevent or minimize the impacts of climate change should be taken even if there is scientific uncertainty regarding some aspects of its effects. This principle promotes a preventive approach, meaning countries must act promptly to reduce emissions without waiting for absolute scientific proof of all the consequences of climate change.

The Islamic View on Environmental Sustainability

How does Islam view nature and the human obligation to preserve it? Islam is a religion that governs not only ritual and theological matters, but also addresses broader aspects of human life — including the human relationship with the Earth. Environmental preservation is not only a duty of humans as successive authority holders of the Earth, but also a foundation for societal welfare.

Nature did not come into existence by itself; it was created by Allah, the Creator, with a perfect and balanced design. The Earth was created with essential natural components like mountains, valleys, rivers, seas, land, flora, and fauna — each formed with sustainability and balance for the benefit of humans and other living beings. Therefore, humans — as beings appointed by Allah to serve as His vicegerents (*khalifah*) on Earth — are given the responsibility to protect and care for it, and are prohibited from causing harm to it.

In the Islamic perspective, humans carry a divine trust (*amanah*) to be responsible for all aspects of life and creation. As stated in a hadith of the Prophet: “Each of you is a shepherd, and each of you is responsible for his flock.”²²

Islam connects environmental preservation not only to direct human interaction with natural elements but also to the spiritual and theological dimensions of human existence. Therefore, maintaining the environment does not rely solely on its physical aspect but also involves transcendent values derived from human actions.

A well-known story, believed to come from the classical Persian tradition, illustrates this principle. It tells of King Anu Shirwan, a Persian emperor, who once inspected his villages. He saw an old farmer planting a tree. The king asked the man why he was planting the tree when he was already very old and unlikely to live long enough to enjoy its fruit. The old man replied: “Our forefathers planted so that we could enjoy the fruits. Now we plant so that future generations may enjoy them.”²³

This story reflects that the continuity of life depends on genuine concern for the environment and a sincere effort to preserve it. Realizing this goal requires not only rational thinking but also moral consideration. The old farmer recognized that his predecessors had taken care of the Earth and left a legacy for the next generation. He, in turn, was willing to do the same—even if he would not live to reap the benefits himself. In this story, the moral value of environmental sustainability is passed down and deeply embedded.

The Spirit of the Kyoto Protocol and Islamic Teachings on Environmental Preservation

Human interaction with nature often leads to exploitative behavior, which damages the environment. People may justify this behavior as necessary for the survival of humanity—through resource exploration, for example. However, this has caused a shift in how humans perceive nature. Misunderstanding or misapplying the concept of nature results in harmful actions that endanger life on Earth.

Exploitative actions continue unchecked, often without awareness or reminders that nature must be preserved. To counter this, a conceptual shift is needed. Society must be encouraged to see nature not just as an object, but as a subject—something with intrinsic value. When nature is treated as a subject, human interaction with it will be based on awareness and responsibility.²⁴

²² *Al-Maktabah al-Shamilah*. Sahih al-Bukhari, 4904. <https://shamela.wa>. Version 4.0, 1446.

²³ An-Nuwayri, Shihabuddin. 1923. *Nihayat al-Arb fi Funun al-Adab*. Cairo: Dar al-Kutub al-Misriyah.

²⁴ Indonesia Environment & Energy Center. “Upaya Pelestarian Lingkungan Hidup”. <https://environment-indonesia.com/articles/upaya-pelestarian-lingkungan-hidup/>

Such a conceptual shift will help nurture the awareness that humans are not merely enjoyers of the Earth's beauty and resources, but also its guardians and caretakers. This awareness stems from the recognition that the benefit from nature today, and should therefore ensure its sustainability for future generations to enjoy as well.

Modernization in various sectors of life—particularly industrialization in developed countries—cannot be halted. However, it has led to an increase in carbon emissions and global warming, ultimately affecting the climate. The Kyoto Protocol, a global agreement from 1997, followed the 1992 UNFCCC Earth Summit in Rio de Janeiro, where climate change was recognized as a serious, global threat. The Kyoto Protocol aimed to reduce emissions through three mechanisms: Emission Trading (ET), Joint Implementation (JI), and Clean Development Mechanism (CDM).

This study explains that humans, as active participants in Earth's life and primary beneficiaries of its resources, play a major role in both preservation and destruction. Human actions can either protect the planet's well-being or contribute to its decline. Therefore, regulations are needed to govern the behavior of individuals, groups, and institutions, in order to ensure balance and sustainability in life and in the broader universe.

From a philosophical perspective, humans occupy a central role in the life cycle of the Earth. They are subjects not only in individual and social terms but also in their relationship with other living beings and the preservation of the natural world.

In Islamic thought, the concept of quality welfare for society is closely tied to environmental preservation. Several key aspects are emphasized: to achieve a healthy global and social life, attention must be given to: public health, environmental cleanliness, social welfare, sustainable resource management. Ecosystem balance must be maintained to prevent disasters and social conflicts. Environmental preservation is deeply connected to the spiritual well-being of society, as shown in the respect for nature as a creation of Allah. Preserving the environment can increase social awareness and strengthen community solidarity.

CONCLUSION

From the discussion presented, it can be concluded that environmental preservation in Islam is not limited to the physical sustainability of nature, but also encompasses the creation of holistic well-being for society—covering physical, economic, spiritual, and social aspects.

The spirit embodied in the Kyoto Protocol is a global call to industrialized nations to safeguard the continuity of life on Earth by regulating and reducing carbon emissions so that natural ecosystems can remain in balance.

Through its teachings, Islam provides moral and spiritual guidance to humanity for maintaining the ecosystem and the continuity of life on this planet. These teachings aim to uphold essential values and apply them in daily life, in order to achieve balance between physical, social, moral, and spiritual dimensions.

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