

A Global Ethical Framework and Islamic Principles in Sustainable Natural Resource Management

Prayitno Prayitno, Raudhatul Hasanah Lie

Universitas Paramadina, Indonesia

Email: prayitno@students.paramadina.ac.id, raudhatul.hasanah@paramadina.ac.id

| ARTICLE INFO | ABSTRACT |
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| Keywords: Natural Resources, Sustainable, Framework, Global Ethic, Islam | Natural resources are fundamental assets for supporting human life and ecosystem sustainability. However, irresponsible exploitation has led to environmental degradation, resource scarcity, and climate change, necessitating ethical and sustainable management frameworks. This study aims to analyze the alignment between global ethical frameworks—including the IUCN Natural Resource Governance Framework (NRGF), Environmental Management System (EMS), The Earth Charter, Environmental, Social, and Governance (ESG), and Sustainable Development Goals (SDGs)—and Islamic principles in sustainable natural resource management. Using a descriptive-comparative qualitative approach, this research conducts a thematic analysis of primary Islamic sources (Qur'an and Hadith) and global framework documents. Data were analyzed to identify conceptual correlations and integrative potential between the two systems. The study reveals significant alignment between global ethical frameworks and Islamic principles, particularly in concepts of sustainability, justice (<i>Al-'Adl</i>), balance (<i>Mizan</i>), and prohibition of waste (<i>Israf</i>). Key Islamic principles such as trusteeship (<i>khalifah</i>) and accountability before God resonate strongly with global sustainability goals. The research also proposes an Islamic Pentahelix collaboration model involving government, academia, business, community, and media to implement these integrated principles. Islamic teachings offer a comprehensive ethical foundation that aligns with and can enrich global sustainability efforts. The integration of these principles through collaborative models like the Islamic Pentahelix can enhance the effectiveness and moral grounding of natural resource management policies worldwide. |

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INTRODUCTION

Examining the definition of natural resources from the perspectives of experts from various disciplines and backgrounds can provide a deeper understanding of the optimal management and utilization of natural resources (Deeksha, 2022; Erdogan, 2024). This understanding is important for all groups: academics, policymakers, entrepreneurs, the general public, and the media, as an effort to promote sustainable and responsible natural resource management. The definitions of natural resources according to experts are presented in Table 1.

Natural resources are vital assets for both human life and ecosystem sustainability (D'amato, 2020). The benefits of natural resources are extensive, including meeting basic human needs (food, water, oxygen), providing energy (fuel, electricity), economic development (industry, employment), advancing science and technology (research materials, electronic components), and environmental preservation and tourism.

Unwise use of natural resources can cause various negative impacts on humans and nature itself. Impact of environmental damage: loss of biodiversity, ecosystem damage, land degradation (Hallaj, 2024; AbdelRahman 2023). Impact of pollution: air pollution, water and soil pollution. Impact of natural disasters: floods, landslides, and forest fires. Impact of climate change: the use of fossil fuels and deforestation increases carbon dioxide (CO₂) levels in the atmosphere, which exacerbates global warming and global climate change. Impact on humans: health problems, water scarcity, and scarcity of natural resources. The trend of increasing global temperatures has continued to rise since 1970 until now, as shown in Figure 1, potentially causing impacts on various aspects, such as extreme climate events (storms, heat waves), rising sea levels due to melting ice, species extinction due to habitat changes, disruption of food security due to drought, and increased health risks due to disease and air pollution. In addition, the sea is becoming more acidic, which threatens underwater biota such as coral and can disrupt the marine food chain.

Ethics in natural resource management encompass moral principles for respecting and preserving nature, such as the principle of no harm, moral responsibility, and compassion for nature. Global ethics in sustainable natural resource management encompass conservation, sustainability, transparency, public participation, and recognition of indigenous peoples' rights to effective management. Global organizations play a crucial role in establishing ethical natural resource management, primarily through the development of guidelines, international agreements, and advocacy for sustainability principles. Indonesian researchers conduct research on topics related to global ethics and Islamic principles in sustainable natural resource management, as presented in Table 2.

Previous research has extensively explored sustainable natural resource management from both global and Islamic perspectives. Studies by Utami et al. (2023) and Siregar et al. (2024) have examined the role of environmental ethics in development, while Islamic scholars such as Ayu & Ramon (2021) and Khoir et al. (2024) have analyzed sustainable resource management through the lenses of Islamic law and eco-philosophy. However, a significant research gap remains in the systematic comparison and integration of global ethical frameworks with Islamic principles. Most existing studies focus on either global norms or religious teachings in isolation, lacking a comprehensive analysis that aligns these two domains within a unified conceptual model.

This research aims to map five global ethical frameworks in sustainable natural resource management and their alignment with the principles of Islamic teachings that have not been discussed by previous researchers. The findings of this study are expected to offer significant benefits for policymakers, Islamic scholars, and environmental practitioners by providing a faith-informed yet globally relevant framework for sustainable development. Furthermore, this research contributes to academic discourse by bridging ethical theories from diverse traditions and offering practical recommendations for cross-sector collaboration in natural resource management.

METHOD

This study used a descriptive-comparative qualitative approach, with the aim of analyzing various global ethical frameworks developed by international institutions such as the IUCN Natural Resource Governance Framework / NRGF (1948), Environmental Management System / EMS (1996), The Earth Charter (2000), Environmental, Social and Governance (2004) and Sustainable Development Goals / SDGs (2015), then linking them with ethical values in Islam as stated in the verses of the Qur'an and Hadith. This descriptive-comparative analysis method serves not only as an academic analytical tool, but also as a reflective effort to bring together two major value systems - global and Islamic - which are both oriented towards sustainability, moral responsibility, and human and environmental well-being. It is hoped that

the results of this study can trace the alignment of universal moral principles with Islamic ethical principles in the context of natural resource management and global sustainability. Data Sources consist of Primary Data in the form of primary data in the form of Al-Qur'an and Hadith texts containing moral values, responsibility towards nature, and social justice and Secondary Data includes official documents and international publications that explain the structure and principles of global ethical frameworks, such as IUCN, EMS, UNESCO, UN reports, and various academic journals related to environmental ethics and sustainability. Data collection is carried out through a literature review of academic publications and international institution documents, and the verses of the Qur'an are selected through thematic methods. Data Analysis Techniques are carried out through several stages; Identification of the main principles in each global ethical framework, Selection of verses of the Qur'an that are relevant to these principles using a thematic interpretation approach and Relational analysis between global principles and Islamic values, to find common ground and conceptual differences.

RESULTS AND DISCUSSION

Understanding natural resources is crucial for all groups: academics, policymakers, entrepreneurs, the general public, and the media, as an effort to promote sustainable and responsible natural resource management. The definition of natural resources according to experts is presented in Table 1.

Table 1. Definition of Natural Resources According to Experts

| Experts | Definition of Natural Resources |
|--|---|
| Emil Salim o Indonesian Economist and Politician o Award: The Leader for the Living Planet (World Wide Fund) | <input type="checkbox"/> Natural resources are everything that comes from nature and can be used to meet human needs. <input type="checkbox"/> Includes various natural raw materials that can be developed and used for human needs, such as water, soil, air, minerals, and plants and animals. |
| Otto Soemarwoto o Indonesian Ecology Expert o Award: Global 500 UNEP (1982) | <input type="checkbox"/> Natural resources are everything found in nature that can be used for human benefit and well-being. <input type="checkbox"/> Discusses the importance of natural resources in supporting human life. |
| David Ricardo o British Political Economist o "The Theory of Comparative Advantage and the Theory of Value" | <input type="checkbox"/> Natural resources are non-renewable factors of production and are limited in quantity. <input type="checkbox"/> Emphasizes the importance of managing and preserving natural resources for their longevity and to support future economic prosperity. |
| Garrett Hardin • American Ecologist and Microbiologist • Journal of "The Tragedy of the Commons" • "The First Law of Human Ecology" | <input type="checkbox"/> Natural resources are goods owned collectively by society and are often damaged due to excessive use, a phenomenon known as the "tragedy of the commons." <input type="checkbox"/> Joint rules and management are needed to ensure that natural resources are not damaged or depleted. |
| Paul Ehrlich o German Physician o Award: Nobel Prize in Physiology or Medicine (1908) | <input type="checkbox"/> Natural resources are everything obtained from the surrounding environment that humans can use to survive and thrive. <input type="checkbox"/> Emphasizes the importance of understanding the environmental impacts of natural resource use and the need to implement a sustainable approach. |
| Robert Costanza o American/Australian Ecological Economist | <input type="checkbox"/> Natural resources are natural assets that have economic and ecosystem value. <input type="checkbox"/> Emphasizes the importance of combining environmental and economic principles in managing natural resources for sustainability. |

| Experts | Definition of Natural Resources |
|--|--|
| <ul style="list-style-type: none"> o Award: Kellogg National Fellow, Pew Scholar, ISEE Kenneth Boulding Award for Ecological Economics | |
| Eugene Odum <ul style="list-style-type: none"> o American Biologist o Award: Tyler Prize for Environmental Achievement (1977), Crafoord Prize (1987) | <ul style="list-style-type: none"> □ Natural resources in an ecological context refer to ecosystem components that provide essential services to human life and the natural environment. □ Emphasizes the interconnected relationship between humans and ecosystems in the management of natural resources. |
| W. C. Clark <ul style="list-style-type: none"> o Ecologist and Policy Analyst o Professor of International Studies, Public Policy, and Human Development (Kennedy School of Government, Harvard University) | <ul style="list-style-type: none"> □ Natural resources are everything found in nature that can be utilized by humans through technology. □ Emphasizes the importance of innovative technology in the management and utilization of natural resources. |
| Barry Commoner <ul style="list-style-type: none"> o American Cellular Biologist o College Professor, and Politician. | <ul style="list-style-type: none"> □ Natural resources are natural materials from the environment that can be used to meet human needs and various economic activities. □ Awareness of the importance of protecting the environment when using and managing natural resources is needed to prevent environmental damage. |
| Herman Daly <ul style="list-style-type: none"> o American Ecological Economist and Geologist o Professor at the School of Public Policy (University of Maryland, USA) o Award: Blue Planet, Grawemeyer, ISEE Kenneth Boulding for Ecological Economics | <ul style="list-style-type: none"> □ Natural resources are natural capital whose sustainability must be maintained. □ Maintaining the principles of prudence and fairness between generations in the use of natural resources to ensure a prosperous future. |

Source: Data processed from various literature sources, 2024

Indonesian researchers conduct research on topics related to global ethics and Islamic principles in sustainable natural resource management, including those presented in Table 2.

Table 2. Research on Global Ethics and Islamic Principles in Sustainable Natural Resource Management

| No | Title | Researcher | Form | year |
|----|--|--|---------|------|
| 1 | “Penerapan Etika dalam Menjaga Kelestarian Lingkungan” | Maria Helena Sandryani, Hana Anjani | Article | 2023 |
| 2 | “Etika Lingkungan dalam Pembangunan” (Siregar et al., n.d.) | Dewi Rahnadani Siregar, Aulia Ryza Aqilla, Nurhasan Syah, Heldi, Indra Catri | Article | 2024 |
| 3 | “Bisnis, Lingkungan Hidup dan Etika Industri” (Hestianah et al., n.d.) | Sudiah Hestianah, Dian Mafulla, Dewa Aray Dwiyanto | Article | 2022 |
| 4 | “Etika Lingkungan dalam Pembangunan Berkelanjutan” (Djaelani, 2011) | Moh. Solikodin Djaelani | Article | 2011 |
| 5 | “Etika Lingkungan (Teori dan Praktik Pembelajarannya)” (Wahanisa & Adiyatma, 2021) | Atok Miftachul, Hudha Husamah, Abdulkadir Rahardjanto | Book | 2019 |

| No | Title | Researcher | Form | year |
|----|---|--|---------|------|
| 6 | “Konsepsi Asas Kelestarian dan Keberlanjutan dalam Perlindungan dan Pengelolaan Lingkungan Hidup dalam Nilai Pancasila” | Rofi Wahanisa, Septhian Eka Adiyatma | Article | 2021 |
| 7 | “Pembangunan Berkelanjutan: Pengelolaan Sumber Daya Alam Berbasis Pembangunan Sosial dan Ekonomi Indonesia” (Niza Utami et al., 2023) | Niza Utami, Rizky Febrian Saragih, Muli Daulay, M. Daffa Maulana, Purnama Ramadani | Article | 2023 |
| 8 | “Perspektif Islam dalam Pembangunan Berkelanjutan: Mengintegrasikan Al-Qur’an dan Assunah Dalam Kebijakan Publik” | Didin Muhafidin | Article | 2024 |
| 9 | “Pengelolaan Sumber Daya Berkelanjutan dalam Perspektif Hukum Islam” (Ayu & Ramon, 2021) | Riana Kesuma Ayu, Fauzan Ramon | Article | 2021 |
| 10 | “Pengelolaan Sumber Daya Alam dengan Pendekatan Ekosofi Islam” (Khoir et al., 2024) | Muhammad RoMizan Khoir, Ajeng Talia Ananti, Ahmad Fauzan Hidayatullah | Article | 2024 |
| 11 | “Etika Pengelolaan Sumber Daya Alam Berkelanjutan dalam Perspektif Islam” (Fadli & Sarjan, 2024) | Zawil Fadli, Muhammad Sarjan | Article | 2024 |
| 12 | “Etika Pengelolaan Sumber Daya Alam Berkelanjutan dalam Perspektif Islam” (Wijaya & Fasa, 2022) | Lovina Meyresta Wijaya, Muhammad Iqbal Fasa, Suharto | Article | 2022 |
| 13 | “Membangun Etika Ekologi Berbasis Nilai-Nilai Islam” (Januaripin & Rahtikawati, n.d.) | Muhamad Januaripin, Kartimi, Yayan Rahtikawati | Article | 2024 |
| 14 | “Penerapan Prinsip Ekonomi Islam dalam Transformasi Ekonomi Berkelanjutan: Analisis Literatur” (Hijjah, 2024) | Hikmah Dzil Hijjah, Jaharuddin | Article | 2024 |
| 15 | “Peran Muslim dalam Pelestarian Lingkungan: Ajaran dan Praktik” (Azzahra & Siti Maysithoh, 2024) | Syaira Azzahra, Siti Masyithoh | Article | 2024 |
| 16 | “Keberlanjutan dan Teknologi Hijau dalam Perspektif Islam” (Ulfah & Cahyadi, n.d.) | Atiyah Ulfah | Article | 2025 |
| 17 | “Integrasi Prinsip Ekonomi Islam dalam Penerapan Ekonomi Hijau di Indonesia: Menuju Pembangunan Berkelanjutan” (Windi Yuni Andini et al., 2024) | Aisyah Rohaini, Windi Yuni Andini, M. Syarif Hafif, Shafiyah Mujahidah Azz, Afif Farhan Ramadhan | Article | 2024 |

Source: Results of a systematic literature review, 2024

According to Maria Helena Sandryani, Hana Anjani (2023), to achieve environmental sustainability in the future, the utilization of natural resources and ethically based environmental management is a must. This requires continuous moral education for the public, incentive programs for businesses that practice environmentally friendly practices, and international financial support to strengthen the implementation of green ethics in various sectors. Dewi Rahnadani Siregar, Aulia Ryza Aqilla, Nurhasan Syah, Heldi, Indra Catri (2022) argue that in sustainable development, ethics plays a crucial role in determining policies and practices that align economic, social, and ecological interests. It is crucial to incorporate the principles of environmental ethics in all aspects of planning and implementation. A fairer and more efficient solution for society and the environment by considering intergenerational justice, sustainability, and environmental responsibility. Refer to Sudiah Hestianah, Dian

Mafulla, and Dewa Aray Dwiyanto (2022), the principles of environmental ethics include: preserving natural systems, being responsible with the principle of solidarity, having compassion and care, living simply and in harmony with nature, preserving ecosystems, and having moral integrity. The paradigm for understanding environmental ethics includes concern for the interests of future generations, biocentric environmental ethics, and ecosystem ethics. In their book, Atok Miftachul, Hudha Husamah, and Abdulkadir Rahardjanto (2019) argue that environmental ethics discusses how humans behave towards nature and explains how humans relate to all dimensions of life. Rofi Wahanisa and Septhian Eka Adiyatma (2021) state that the basic principles of sustainability and sustainability emerged as a response to environmental damage. The principles of environmental management include environmental policies, regulation, maintenance, control, and management. According to Niza Utami, Rizky Febrian Saragih, Muli Daulay, M. Daffa Maulana, Purnama Ramadani (2023), development in Indonesia must be sustainable and environmentally conscious. Currently, this development is still in its early stages and needs to be realized through legal regulations at the basic level. The success of sustainable development depends on various factors, not only legal but also political, cultural, and human resource conditions.

The core principle of sustainable development is to maintain the quality of life for all humans, both now and in the future in a sustainable manner. Sustainable development is carried out by applying the principles of economic welfare, social justice, and environmental preservation. Didin Muhafidin (2024) in his research explores how to apply the principles of the Qur'an and Sunnah in making public policies, especially in the context of sustainable development. These principles provide a moral basis and practical working methods, which can be used in various areas of public policy, from natural resource management to realizing social and economic justice. The research of Riana Kesuma Ayu and Fauzan Ramon (2021) discusses how to combine Islamic jurisprudence (Fiqh) with natural resource law, explaining a comprehensive approach to managing natural resources sustainably from an Islamic legal perspective. Combining Islamic jurisprudence with natural resource law can have a significant impact in forming a holistic approach to resource management. From an Islamic legal perspective, humans are treated as stewards of the earth (khalifah), which emphasizes responsibility, justice, sustainability, and balance in the use of natural resources. Muhammad RoMizan Khoir, Ajeng Talia Ananti, and Ahmad Fauzan Hidayatullah (2024) argue that natural resource management is a pressing issue on a global scale. Islamic ecosophy emerged in this context as a paradigm that aims to combine Islamic principles with sustainability and environmental protection. In their research, Zawil Fadli and Muhammad Sarjan (2024) discuss the importance of ethics in managing natural resources sustainably from an Islamic perspective. The earth and all its contents are considered a gift from Allah that must be protected and used wisely so that humans can prosper and survive. According to Lovina Meyresta Wijaya, Muhammad Iqbal Fasa, and Suharto (2022), ethics in managing natural resources sustainably aims to ensure that they are managed wisely and intelligently, without damaging the surrounding environment. This is done so that human life can continue and natural resources can survive and coexist sustainably and provide mutual benefits between nature and humans.

Ethics in managing natural resources is crucial for realizing sustainable development. Islam also teaches humans to protect and preserve the environment for the welfare of humanity. In implementing ethical natural resource management, there are several principles that must be adhered to, namely the principles of respecting and appreciating nature, responsibility, solidarity, compassion, and maintaining balance with the environment. Research by Muhamad Januaripin, Kartimi, and Yayan Rahtikawati (2024) explores the spiritual aspect that can influence how a person behaves towards the environment in various situations. Spirituality, through religious teachings and ways of thinking about life, can help raise awareness to keep the environment alive and protect nature responsibly. A mutually beneficial relationship

between humans and nature is important, the application of spiritual values in managing natural resources, and the formation of environmental ethics based on a spiritual mindset. The research of Hikmah Dzil Hijjah, Jaharuddin (2024) emphasizes the importance of taking moral, ethical, and common welfare values into account in formulating and implementing economic policies.

The principles of Islamic economics provide good choices in facing complex economic and social challenges, with a focus on justice, responsibility, solidarity, and cooperation to maintain balance and the welfare of society as a whole. Refer to Syaira Azzahra, Siti Masyithoh (2024), Islamic principles can be a good guideline in facing current environmental challenges and encourage concrete actions to maintain a sustainable environment. Atiyah Ulfah (2025) conveys the concept of sustainability and green technology from an Islamic perspective is increasingly important to maintain the environment in balance to meet current human needs without making it difficult for future generations to meet their needs. However, in its implementation in countries with a majority Muslim population, there are still many obstacles, such as a lack of public awareness, inadequate facilities, and policies that do not support. The research of Aisyah Rohaini, Windi Yuni Andini, M. Syarif Hafif, Shafiyah Mujahidah Azz, Afif Farhan Ramadhan (2024) discusses how to combine Islamic economic principles in the implementation of a green economy in Indonesia, as a step towards achieving sustainable development. A green economy focuses on the efficient use of natural resources, reducing negative impacts on the environment, and improving community welfare. Islamic economic principles, which emphasize social justice, wise management of natural resources, and fair distribution of wealth, can work together with a green economy to achieve these goals. By implementing Islamic economic principles, Indonesia can accelerate the achievement of sustainable development, while providing solutions to the problems of social inequality and environmental damage. The Indonesian government needs to create policies that support the implementation of a green economy based on Islamic economic principles, so that society can achieve fair and sustainable welfare. In general, researchers agree that sustainable management of natural resources is essential.

Global organizations have played a role in establishing ethical principles for sustainable natural resource management through the development of guidelines, international agreements, and advocacy for sustainability principles. IUCN Natural Resource Governance Framework / NRGF (1948): IUCN was founded in 1948 as an international organization of governments and non-governmental organizations working in the field of nature conservation and natural resource utilization. NRGF is a framework developed by IUCN to help evaluate and strengthen natural resource governance in a fair, effective, and sustainable manner. Environmental Management System / EMS (1996): Developed by the International Standards Organization (ISO), an international organization that creates global standards. This standard was developed in collaboration with its member countries to help organizations systematically manage their environmental impacts. This standard provides a framework for organizations to systematically manage their environmental impacts, improve environmental performance, ensure regulatory compliance, and achieve sustainability goals.

The Earth Charter (2000): The Earth Charter is a global commitment developed through an international consultation process (over 80 countries, facilitated by the Earth Charter Commission and UNESCO). The goal is to build a universal ethical framework for sustainability, social justice, and peace. Environmental, Social, and Governance / ESG (2004): Is a global framework used to assess the extent to which an organization manages its environmental impact, its social responsibility, and its corporate governance. Although its roots date back to the ethical investment movement since the mid-20th century, the modern ESG concept was only formally formulated in the early 2000s through UN and IFC initiatives that emphasized that non-financial factors such as environmental and social can influence long-term economic performance. Today, ESG is widely applied worldwide as a standard for

corporate sustainability and accountability, not only as a moral choice, but also as an instrument for risk management and global competitiveness. ESG helps companies balance profitability with social and ecological responsibility, ensuring that economic growth does not undermine the earth's carrying capacity or human well-being. UN Sustainable Development Goals / SDGs (2015): The SDGs are the UN's global agenda, designed to end poverty, protect the planet, and ensure prosperity for all by 2030. The SDGs were born in 2015 through the UN General Convention in New York, as a continuation of the Millennium Development Goals (MDGs) which ended in the same year. The main objective of the formation of the SDGs is to create a universal development framework that integrates three dimensions of sustainability: Economic, Social and Environmental.

Based on the description and analysis above, a comparison between the global ethical framework in natural resource management and the principles of Islamic teachings is presented in Table 3.

Table 3. Comparison of Global Ethics with Islamic Principles in Sustainable Natural Resource Management

| Global Framework | Ethics and Standards | Principles of Islamic Teachings |
|---|--|--|
| Framework 1: IUCN Natural Resource Governance Framework / NRGF (1948) | Sustainable and Equitably Shared Resources | Al-A'raf: 7/31 "And eat and drink, but do not overdo it" Ar-Ruum: 30/9 "Those people are stronger than they (themselves) and they have cultivated the earth (land) and prospered it beyond what they have prospered" |
| Framework 2: Environmental Management System / EMS (1996) | Regular and sustainable management of environmental responsibilities aims to reduce negative impacts on the environment, comply with applicable environmental regulations, and increase the use of resources more efficiently. | Islam views humans as caliphs, responsible leaders and guardians of nature, with a duty to ensure prosperity, maintain balance, and preserve the environment for future generations. This duty is not to exploit nature at will, but rather to use resources wisely as a trust from Allah SWT. Al-A'raf: 7/56 "Do not cause mischief on the earth after it has been properly arranged." Hud: 11/6 "He created you from the earth (soil) and made you prosperous therein" |
| Framework 3: The Earth Charter (2000) | Respect and Care for all Life: Nature and humans are seen as one interdependent community of life. Ecological Integrity: Protecting and restoring the Earth's ecological systems. Social and Economic Justice: Ensuring equal access to resources and the eradication of poverty. Democracy, Non-violence, and Peace: | Islam is a mercy for all the worlds Al-Anbiya: 21/107 "We did not send you (Prophet Muhammad), except as a mercy for all the worlds" Islam teaches that humans have a responsibility as caliphs or guardians of Allah on earth, to protect and care for the universe. Al-Baqarah: 2/30 "I will make a caliph on earth" Islam commands to act fairly An-Nahl: 16/90 "Indeed, Allah commands to act justly, do good deeds, and provide assistance to relatives" Al-Qashash: 28/77 |

| Global Framework | Ethics and Standards | Principles of Islamic Teachings |
|---|--|--|
| | Natural resource governance must be carried out in a fair, participatory, and peaceful manner. | "Do good (to others) as Allah has done good to you and do not cause harm on earth" |
| Framework 4: Environmental, Social, and Governance/ESG (2004) | Environmental: Ethics towards Nature and Sustainability. Maintaining ecological integrity and avoiding overexploitation. | <p>Hud: 11/61 "He created you from the earth (soil) and made you prosperous therein"</p> <p>Al-A'raf: 7/56-58 "And do not cause harm on the earth after it was (created) well" "It is He who blows the wind as a bearer of good news, preceding the arrival of His mercy (rain), so that when the wind brings clouds, We drive them to a barren area, then We send down rain in that area. Then We grow with that rain various kinds of fruit" "And in good land, the plants grow well with God's permission; and in bad land, the plants only grow miserable."</p> <p>Ar-Rahman: 55/7-9 "And He has raised the heavens and created balance, so that you do not destroy that balance, and uphold that balance fairly and do not reduce that balance."</p> |
| Framework 5: Sustainable Development Goals/SDGs (2015) | Clean Water and Sanitation (SDGs No.6): Ensuring the availability and sustainable management of clean water and sanitation | <p>In Islamic teachings, clean water is very important, both because it is a source of life and is used to cleanse oneself.</p> <p>Ar-Ra'd: 13/17 "He sent down water from the sky, and the water flowed in the valleys according to their measurements."</p> <p>Al-Ma'idah: 5/6 "O you who believe, when you stand up to pray, wash your face and your hands up to the elbows and wipe your head and (wash) your feet up to the ankles. If you are in a state of junub, take a bath"</p> <p>Al-Baqarah: 2/60 "Then We said, "Strike the rock with your staff!" So, twelve springs emanated from it (the rock). Each tribe knew its (respective) drinking place."</p> |
| | Affordable and Clean Energy (SDGs No.7): Access to affordable, reliable, sustainable and modern energy for all | <p>The Quran does not explicitly mention "clean energy," but there are verses that suggest the use and conservation of energy in an environmentally friendly and non-destructive manner.</p> <p>The Quran mentions 10 renewable energy sources: Heat Energy (Al-Waqiah: 56/71-72), Light Energy (An-Nur: 24/35), Wind Energy (Al-Fathir: 35/9), Sound Energy (Hud: 11/67), Water Energy (Az-Zumar: 39/21), Kinetic Energy (al-Abasa:80/34), Mechanical Energy (Maryam: 19/25), Potential Energy (Al-A'raf: 7/107),</p> |

| Global Framework | Ethics and Standards | Principles of Islamic Teachings |
|------------------|---|--|
| | | <p>Chemical Energy (Al-Quraisy:106/4), and Radiation Energy (Al-Kahfi: 18/90).</p> <p>Ar-Waqiah: 56/71-73</p> <p>"Do you see the fire you kindle? Is it you who make its wood grow, or is it We who make it grow? We made it (the fire) a reminder and a benefit for travelers."</p> <p>Al-Fathir: 35/9</p> <p>"It is Allah Who sends the winds, then they drive the clouds. Then We direct them to a dead land, then with it We revive the earth after its death."</p> |
| | <p>Responsible Consumption and Production (SDGs No.12): Sustainable production and consumption patterns. Regulating how resources are extracted, used, recycled, and disposed of without exceeding the Earth's carrying capacity.</p> | <p>In production activities and the ownership of assets or property, Islam teaches that property rights are a trust. The true owner is Allah SWT, while humans merely use property as a means to achieve good. When using such property, the rights of the community must be respected and upheld.</p> <p>Al-Baqarah: 2/188</p> <p>"Do not consume your wealth among yourselves unjustly, nor bring it to the judges with the intention of consuming some of it sinfully, while you know it."</p> <p>The basic principles of food consumption according to Islam are fairness, cleanliness, simplicity, compassion, and moral values.</p> <p>Al-Baqarah: 2/168</p> <p>"O mankind, eat of what is lawful and good on earth and do not follow the footsteps of Satan."</p> <p>An-Nahl: 16/114</p> <p>"Eat some of what Allah has given you as lawful and good (sustenance) and be grateful for Allah's blessings if you only worship Him"</p> <p>Al-Isra: 17/26</p> <p>"Give close relatives their due, (also to) the poor, and people who are on a journey. Do not squander (your wealth) wastefully"</p> |
| | <p>Climate Action (SDGs No.13): Taking urgent action against climate change and its impacts.</p> | <p>Islam pays attention to the handling of climate change and all its impacts. Awareness of warnings about environmental damage caused by humans.</p> <p>Ar-Ruum: 30/41</p> <p>"Corruption has appeared on land and sea because of what the hands of men have earned. Allah will make them taste a part of their deeds, that they may return (to the right path)."</p> <p>Islam encourages the need for repair efforts for this damage.</p> <p>Tafsir Tahlili Kementerian Agama RI.</p> <p>"This prohibition against causing harm covers all areas, such as harming the relationships, physical and spiritual well-being of others, the lives and sources of livelihood (agriculture, migration, etc.),</p> |

| Global Framework | Ethics and Standards | Principles of Islamic Teachings |
|------------------|--|--|
| | | including damaging the environment. "This earth has been created by God with all its facilities, such as mountains, valleys, rivers, oceans, land, forests and others, all of which are intended for human needs, so that they can be cultivated and utilized optimally for their welfare." |
| | Life Below Water (SDGs No.14): Conservation and sustainable use of marine and ocean resources. | <p>Islam is a religion that teaches goodness and demonstrates obedience to Allah. Believing in Islam means protecting and safeguarding the earth, both on land and at sea. The sea is part of Allah's power and compassion for all creatures, including humans.</p> <p>QS. an-Nahl:16/14 "And it is He, Allah who has subdued the sea (for you), so that you can eat from it fresh meat (fish), and you bring out of the sea the ornaments that you wear; and you see the ark sailing in it, and so that you seek (benefit) from His bounty, and so that you are grateful."</p> <p>Ocean damage endangers human life as a whole, and shows injustice between generations.</p> <p>Ar-Ruum: 30/41 "There has been visible damage on land and in the sea caused by the actions of human hands so that Allah can show them some of the (consequences of) their actions, so that they return to the right path"</p> |
| | Life on Land (SDGs No.15): Protect, restore and promote sustainable use of terrestrial ecosystems. | <p>Islam emphasizes the prohibition of destruction and the encouragement to preserve nature.</p> <p>Al-A'raf: 7/56 "Do not cause mischief on the earth after it has been properly arranged."</p> <p>Ar-Rahman: 55/7-8 "And Allah has raised the heavens and He has placed a balance so that you do not exceed the limits of that balance."</p> |

Source: Comparative analysis of authors based on literature studies, 2024

Islamic principles in natural resource management are based on the concept of humans as caliphs (leaders or managers) on earth who are entrusted by Allah to protect and utilize nature wisely. Natural resource management must be in accordance with the teachings of the Qur'an and Sunnah. Tawhid and Amanah: Everything belongs to Allah, humans do not have absolute ownership of nature, but are entrusted with managing it. As caliphs, humans are responsible and will be held accountable before Allah. Balance (*Mizan*); Islam emphasizes the importance of maintaining the balance of nature and prohibits destruction on earth. Sustainability (Sustainable Development); The use of natural resources must take into account the survival of future generations and not only be oriented towards short-term profits. Islam encourages environmental conservation measures. Prohibition of Excessiveness (*Israf*) and Waste (*Tabdzir*); Islam prohibits excessive consumption of anything, including natural resources. Islam encourages efficiency in the use of resources, even water, as taught by the Prophet Muhammad (peace be upon him). Justice (*Al-'Adl*): Natural resources must be

distributed fairly and equitably to all humanity, providing benefits for the benefit of all, not just for the benefit of a select few. *I'tibar* (Learning from the Lessons): humans are encouraged to reflect on and learn from all natural phenomena as signs of Allah's greatness. This principle encourages humans to develop environmentally friendly science and technology in managing natural resources.

The correlation and alignment of 5 global ethical frameworks and Islamic principles in sustainable natural resource management are presented in Table 4.

Table 4. Alignment of 5 Global Ethical Frameworks with Islamic Principles in Sustainable Natural Resource Management

| NRGF | Global Ethics | | | | Islamic Principles |
|----------------------------|--|--|---|---|---|
| | EMS | EC | ESG | SGDs | |
| Coordination and Coherence | Emergency preparedness and response | Respect and Care for the Community of Life | | Clean water and sanitation; Affordable and clean energy; Life below water; Life on land | Balance (<i>Mizan</i>) |
| Sustainable Resources | Environmental policy, Actions to address risks and opportunities | Ecological Integrity - Protect and restore the integrity of Earth's ecological systems. | Environmental: Climate change, Greenhouse gas emissions, Biodiversity loss, Deforestation/r eforestation, Pollution mitigation, Energy efficiency and Water management. | Sustainable cities and communities; Climate action | Sustainability |
| Accountability | Operational planning and control | Ecological Integrity - Adopt patterns of consumption, production, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being. | | Responsible Consumption and Production | Excessive Prohibition (<i>Israf</i>) and Waste (<i>Tabdzir</i>) |
| Equitably Shared Resources | Understanding the needs and expectations of interested parties | Social and Economic Justice - Uphold gender equality and the right to education, health, and economic opportunity for all. | Diversity, equity; Inclusion; Conflicts and humanitarian crises | No Poverty; Zero hunger; Reduced inequality; Peace, justice and strong institutions | Justice (<i>Al-'Adl</i>) |
| Diverse Cultures, | Performance evaluation; | Ecological Integrity - Advance the | | Industry, Innovation, Technology | Taking Lessons (<i>I'tibar</i>) |

| Global Ethics | | | | | Islamic Principles |
|----------------------------|-----------------------|---|-----|--------------------|--------------------|
| NRGF | EMS | EC | ESG | SGDs | |
| Knowledge and Institutions | Continual improvement | study of the ecological sustainability of Earth and promote the equitable transfer of environmentally sound technologies. | | and Infrastructure | |

Source: Author's synthesis and analysis results, 2024

CONCLUSION

Islamic teachings align closely with global ethics frameworks in natural resource management, including key models such as the IUCN Natural Resource Governance Framework (1948), the Environmental Management System (1996), The Earth Charter (2000), Environmental, Social and Governance (2024), and the Sustainable Development Goals (2015). This alignment is rooted in the concept of trust and the role of humans as *caliphate* (stewards) mandated by Allah, emphasizing balanced, sustainable, and non-destructive management of nature for the common good. Islam promotes responsible, fair, and moderate use of resources while preserving environmental harmony as an act of worship and gratitude to Allah SWT. Its universal principles can adapt across various social, cultural, and technological settings. To support sustainable natural resource management, the Islamic Pentahelix collaboration model is recommended, integrating government, academics, businesses, communities, and media to promote moral and spiritual responsibility. Governments should enact supportive policies aligned with Islamic ethics, academics contribute research grounded in Islamic values, businesses adopt socially and environmentally responsible practices, communities increase stewardship awareness, and Islamic media educate the public on these principles. Future research could explore the practical implementation and effectiveness of the Islamic Pentahelix model in diverse socio-economic contexts to enhance cross-sector cooperation in sustainable resource governance.

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