

ECOLOGICAL BALANCE IN THE QUR'AN: A THEMATIC REVIEW OF VERSES ON CLIMATE CHANGE MITIGATION AND ADAPTATION

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Abstract: The phenomenon of climate change and environmental damage caused by human activities has become a global issue that affects the ecological balance of the earth. The Qur'an as a guideline for Muslims contains principles that are relevant to climate change mitigation and adaptation, such as balance, moderation, sustainable management, and reforestation. This study aims to explore and analyze the teachings of the Qur'an related to climate change mitigation and adaptation efforts in the context of maintaining ecological balance. This study uses a qualitative method with a library research approach and thematic interpretation. Data were obtained from primary sources, such as interpretation books, and secondary sources, such as related books and articles. The thematic approach of Abd al-Hayy al-Farmāwī and liberating hermeneutics were used to analyze the verses of the Qur'an related to ecology and climate change mitigation. The results of the study show that the Qur'an emphasizes the importance of the principle of moderation in consumption (QS. Al-A'rāf: 31), sustainable resource management (QS. Hūd: 61), readiness and resilience to environmental challenges (QS. Al-Anfāl: 60), and reforestation (QS. Al-An'ām: 99). These principles do not only focus on practical actions but also moral and spiritual

aspects as caliphs on earth. The implication of this study is the importance of integrating the teachings of the Qur'an in environmental policies and ecological education to create awareness and shared responsibility in maintaining the balance of the ecosystem for the sustainability of life on earth.

Keywords: Ecology, Mitigation, Adaptation, Climate Change

Introduction

One of the greatest blessings that Allah has given to mankind is to make the earth habitable with an integrated ecosystem. The basic principle of ecology is biodiversity and its important role. Without the diversity of living things such as plants, animals, and microorganisms that live alongside humans, life as we know it today would not be possible (Susilo, 2022). In Surah Al-Rahmān (55): 7-9, Allah commands us to maintain balance and not to exceed the limits. This command is found in the surah that describes the various blessings of Allah, both in the world (sea, land, and air) and in the hereafter. This shows that these blessings can only be truly felt if the balance in their use is maintained (Wahyuni, 2024).

The use of science and technology and excessive consumption patterns among modern humans have caused an imbalance in nature. For example, industrial countries consume 2/3 of the world's fuel production, even though their population is only one-third of the global population. Excessive use of fuel by industrial societies produces greenhouse gas (GHG) emissions that trigger global warming and cause climate change. This global warming phenomenon is one example of damage to the balance of nature where humans live together with other creatures (L. Sholehuddin, 2021; Sahlan et.al, 2022).

Climate change is one of the major problems facing humans today. Greedy and hedonistic behavior towards an increasingly glamorous world is pushing humans, and even nature

as a whole, closer to destruction. Climate change is also one of the biggest challenges to environmental sustainability in the modern era. Various studies have shown that climate change is caused by human activities. The exploitation of natural resources, deforestation, land conversion, transportation, and consumer lifestyles are the main causes. Human greed causes crises and disasters (Ahmad, 2022).

God created the universe with a harmonious and ideal system for human life. However, destructive human actions have disturbed this balance, resulting in imbalance and disruption in the natural system. The occurrence of natural disasters is not only a divine destiny but is often the result of disruption of the laws of natural balance. When environmental harmony and balance are not maintained, natural order can be disrupted, which can ultimately trigger natural disasters (Aljazira & Akbar, 2024; Sartika, 2020).

Allah swt has informed us through revelation that environmental damage has occurred due to human actions. Allah says in Surah Al-Rūm (30): 41 as follows:

ظَهَرَ الْفَسَادُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ أَيْدِي النَّاسِ لِيُذِيقَهُمْ بَعْضَ
الَّذِي عَمِلُوا لَعَلَّهُمْ يَرْجِعُونَ

“Mischievous has appeared on land and sea because of (the deed) that the hands of men have earned, that ((Allah)) may give them a taste of some of their deeds: in order that they may turn back (from Evil)”.

Islam is a religion that places great emphasis on environmental concerns and the sustainability of life in the world. The Qur'an and Hadith extensively discuss, encourage, and even require every individual to maintain their own survival and the lives of other creatures on earth. One step that can be taken to address climate change is through adaptation and mitigation.

Mitigation involves efforts to reduce emissions from sources that produce greenhouse gases (Andriyani, Ernyasih, n.d.).

In this context, it is important to explore the various sources of knowledge that can provide guidance and solutions. One of the main sources is the Qur'an, the holy book of Muslims which contains profound teachings on life and the environment. The Qur'an provides not only spiritual guidance but also ethics and principles related to the environment. Several verses in the Qur'an explicitly discuss the balance of nature and the relationship between humans and the environment. In Islam, the role of humans as caliphs includes not only power on earth but also the responsibility to prosper and protect the earth (Bashyroh & Mahmud, 2021). Contextualizing this role of the caliph is a crucial first step in efforts to care for the increasingly damaged environment, which if not addressed could lead to the destruction of the world. In this era of climate change, it is important to examine how the teachings of the Qur'an can be applied in the context of climate change mitigation and adaptation.

Based on the background explanation regarding the significant impact of climate change on life, efforts are needed to overcome the damage to achieve balance and create a healthy and prosperous life. Therefore, the author wants to examine how mitigation and adaptation to climate change can be understood through the teachings of the Qur'an.

This study uses a qualitative research type and is also known as library research, which is a study whose data sources come from written materials, especially from standard books related to the object of research. The research approach used is the thematic interpretation approach. This approach examines and analyzes the verses of the Qur'an thematically, with the aim of identifying and understanding the principles related to ecological balance, mitigation, and adaptation to climate change. The thematic method here is the thematic method introduced by Abd

al-Hayy al-Farmāwī and liberative hermeneutics. Al-Farmāwī's thematic method is used to sort and select verses that are in accordance with the theme of combating unemployment, while liberative hermeneutics is used to analyze data from themes and verses about combating unemployment that have been sorted and selected using the first method. According to al-Farmawī, there are at least seven steps that can be taken in interpreting the Qur'an thematically. First, determine the problem or topic to be discussed; second, collect verses related to the problem; third, compiling the sequence of verses according to the time of their revelation accompanied by knowledge of the *asbāb al-nuzūl*; fourth, understand the correlation of these verses in their respective letters; fifth, organize the discussion in a perfect framework; sixth, complement the discussion with hadiths that are relevant to the subject matter; and seventh, collecting verses that have the same meaning, compromising verses that are *'ām* with *khās*, *muthlaq* with *muqayyad*, and compromising verses that are outwardly contradictory (Basid, 2020).

The data sources in this study consist of two sources. The first source, the primary source is a data source that refers to information that has a direct relationship and is the basis for an analysis or discussion. The primary data source for this study is several Tafsir books by scholars that touch on the problems of ecology and mitigation. The second source, the secondary source is information collected from books that support the study being studied. In this study, the author uses tafsir books, books, and/or writings related to climate change mitigation and adaptation.

Ecological Balance In The Qur'an

The interaction between humans and the environment and their surrounding habitat is a very close and inseparable relationship. With the increasing global issues regarding the destruction of the earth, the threat to human survival is also increasing, considering the increasing dependence of humans on

the environment. Natural resources that are the mainstay for human survival are now threatened due to ineffective management and excessive exploitation. This causes environmental damage to worsen, which in turn hurts the quality of human life and the balance of the ecosystem (Herman et al., 2023).

The environment which is the nature where humans live must be kept in balance and sustainable. Sustainable is an expression that means maintenance. Humans have an important role in the management and preservation of the environment. As humans were chosen by Allah swt. as a caliph. In the Qur'an, it is explained that humans have received a great mandate from Allah SWT. which the heavens, earth, and mountains are reluctant to bear. As emphasized in the QS. Al-Ahzāb (33): 72:

إِنَّا عَرَضْنَا الْأَمَانَةَ عَلَى السَّمَاوَاتِ وَالْأَرْضِ وَالْجِبَالِ فَأَبَيْنَ أَنْ يَحْمِلْنَهَا وَأَشْفَقْنَ مِنْهَا وَحَمَلَهَا الْإِنْسَانُ إِنَّهُ كَانَ ظَلُومًا جَهُولًا

“We did indeed offer the Trust to the Heavens and the Earth and the Mountains; but they refused to undertake it, being afraid thereof: but man undertook it;- He was indeed unjust and foolish”.

M. Quraish Shihab argues that the assignment of trust to humans shows that humans have the potential to carry it out well. Meanwhile, the rejection of the heavens, earth, and mountains to the trust is intended to illustrate how heavy the responsibility is, not to show that God's creations are considered small and insignificant (Shihab Quraish, 2021).

As caliphs, humans have the duty and responsibility to maintain, care for, and preserve the various resources that have been provided by Allah (Gufron & A. Hambali, 2022). Allah allows humans to utilize all of these natural resources as a source of sustenance, not only for humans but also for all living things on

earth (Abta, 2006). This responsibility has been placed on humans before they were created. Allah says in QS. Al-Baqarah (2): 30:

وَإِذْ قَالَ رَبُّكَ لِلْمَلَائِكَةِ إِنِّي جَاعِلٌ فِي الْأَرْضِ خَلِيفَةً قَالُوا أَتَجْعَلُ فِيهَا مَنْ يُفْسِدُ فِيهَا وَيَسْفِكُ الدِّمَاءَ وَنَحْنُ نُسَبِّحُ بِحَمْدِكَ وَنُقَدِّسُ لَكَ قَالَ
إِنِّي أَعْلَمُ مَا لَا تَعْلَمُونَ

“Behold, thy Lord said to the angels: “I will create a vicegerent on earth”. They said: “Wilt Thou place therein one who will make mischief therein and shed blood?- whilst we do celebrate Thy praises and glorify Thy holy (name)?” He said: “I know what ye know not”.

M. Quraish Shihab when interpreting the surah Al-Baqarah (2): 30 stated “Khalifah originally meant one who replaces or comes after who came before. On this basis, some understand the word caliph here in the sense of “replacing Allah” in upholding His will and implementing His decrees. This verse shows that the caliphate consists of the authority bestowed by Allah swt. creatures who are entrusted with the task, namely Adam and his descendants, and the area where the task is carried out, namely this expansive earth. If so, this caliphate requires creatures who are entrusted with the task to carry out the task according to Allah’s instructions. Wisdom that is not by His will is a violation of the meaning and duties of the caliphate.” (Shihab Quraish, 2021).

The responsibility of humans as Allah’s caliphs on this earth is to worship Him, both vertically and horizontally. This horizontal worship is related to environmental preservation. The existence of halal and haram provisions in religion is an effort to limit human movement so that they live orderly and maintain the balance of this environmental system (Al-Qur’an, 2009). Environmental preservation is not only for the benefit of humans alone but also for the welfare of all living things because no life in

this world can be separated from interdependence (Al-Qur'an, 2009).

This nature was created in balance as mentioned in the QS. Al-Hijr (15): 19:

وَالْأَرْضَ مَدَدْنَاهَا وَأَلْقَيْنَا فِيهَا رَوَاسِيَ وَأَنْبَتْنَا فِيهَا مِنْ كُلِّ شَيْءٍ مَوْزُونٍ

“And the earth We have spread out (like a carpet); set thereon mountains firm and immovable; and produced therein all kinds of things in due balance”.

Yusuf Al-Qardhawi said that the word “measure” cannot be interpreted figuratively because all parts of plants have truly been created according to their respective measures. According to him, the measures in question include metal content, water salts and so on based on grams, milligrams, or even lower numbers than these modern measures (Al-Garadhawi, 2001).

In Islam, balance is a fundamental principle that must be applied in all aspects of life, including the relationship between humans and the environment. In utilizing natural resources, humans must always try to maintain ecological balance (Hidayat, 2023). The harmony and stability of this life require balance and sustainability in all areas. Allah swt designed mountains, rivers, seas, lakes, and trees to revive the dry and barren earth to become fresh and healthy, even green because it is filled with grass. The water has also grown plants that produce seeds and fruits that can be enjoyed by living things (Rofi'i, Taufik Warman Mahfuzh, 2020).

The Qur'an as the main source of Islamic teachings emphasizes the importance of maintaining the balance of life on earth. One of the most frequently quoted verses is QS. Al-Rūm (30): 41:

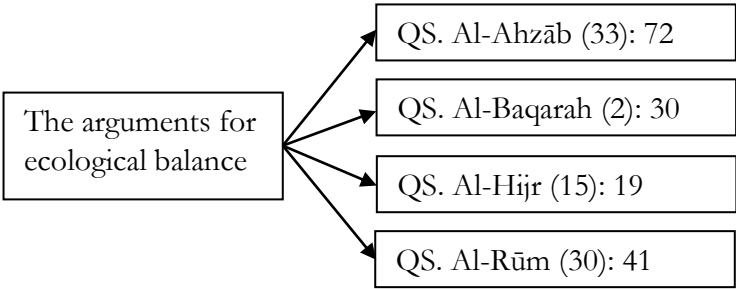
ظَهَرَ الْفَسَادُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ أَيْدِي النَّاسِ لِيُذِيقَهُمْ بَعْضَ
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“Mischief has appeared on land and sea because of (the
meed) that the hands of men have earned, that ((Allah))
may give them a taste of some of their deeds: in order
that they may turn back (from Evil)”

The verse above has proven that religion pays great attention to the environment and that the damage that occurs on this earth is caused by human hands, who are experiencing a crisis of faith in Allah because nature has been created in a state of balance (Wahidi, 2022). The interpretation of the verse above in the classical interpretation path is almost the same. For example, Ibn Kathir in *Tafsir Ibn Kathir* and Abu Bakar al-Jaza'iri in *Aisir al Tafasir* argue that what is meant by damage is acts of shirk, murder, sin, and all violations against Allah. At that time there had not yet been environmental damage like today, so that *fasād* was interpreted as social damage and spiritual damage (Nani, 2017).

Meanwhile, M. Quraish Shihab defines *fasād* as damage to nature that will cause human suffering. He explained that the damage is the result of sins and violations committed by humans, resulting in disruption of the balance on land and at sea (Shihab Quraish, 2021). Creating balance is the duty of humans in this world. If humans arbitrarily use this nature so that it causes chaos, then it is a despicable thing. Chaos has begun to be felt when various ecological crisis issues arise such as weather changes, chaos in the rainy season that disrupts the planting season, and so on (Manguju, 2022).

Below is a summary of the verses on ecological balance to make it easier to understand:

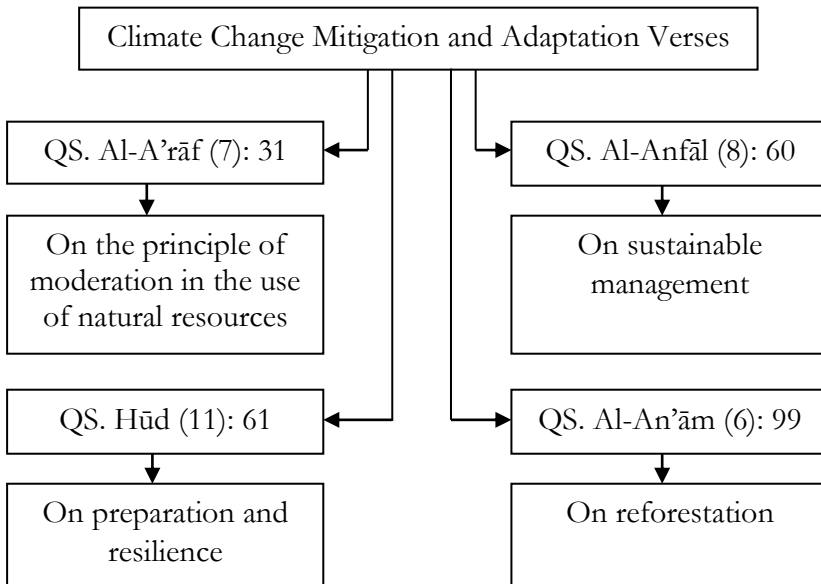


Mitigation and Adaptation To Climate Change According To The Teachings Of The Qur'an

Climate change has had a serious impact on nature and human survival on Earth. The solution to prevent the dangers of climate change is not enough with technology and science alone. But it needs another, more fundamental approach. The occurrence of climate change makes someone need to formulate and reflect on the relationship between humans and the universe (Rendra et al., 2024).

Several verses of the Qur'an guide actions that can be taken to mitigate and adapt to climate change that were studied by researchers, namely: 1) Surah Al-A'rāf verse 31 on the principle of moderation in the use of natural resources, 2) QS. Hūd verse 61 on sustainable management, 3) QS. Al-Anfāl verse 60 on preparation and resilience, and 4) QS. Al-An'ām verse 99 on reforestation.

Below is a description of the above classification, which will be explained one by one to then be interpreted based on the theme of Climate Change Mitigation and Adaptation in the Qur'an, by referring to the results of the interpretation of the mufassirs. Here is a description of the map:



Surah Al-A'rāf verse 31 is very relevant in efforts to mitigate climate change. By implementing the principle of moderation in consumption and production, we can contribute to reducing environmental impacts and climate change. The principle of moderation (moderation) in consumption can be adapted to policies to reduce emissions and energy conservation. This principle encourages an energy lifestyle and reduces waste which is important in the context of climate change. Steps such as reducing emissions, and reducing waste can help maintain ecological balance and protect future generations (Aul, 2022).

Surah Hūd verse 61, contains the meaning that environmental management is one of the important tasks that must be carried out by humans in their lives on earth. Allah created humans with perfection, equipped with reason, heart, feelings, and physical-biological abilities, to carry out their roles and responsibilities as caliphs on earth (Fajrussalam et al., 2023). In the context of climate change mitigation, sustainable management of natural resources is key. Humans are given the

potential to cultivate the earth, but it must be done in a way that is not damaging. For example, environmentally friendly agricultural practices, the use of renewable energy, and good waste management can help reduce greenhouse gas emissions.

Next, in conserving nature, the Qur'an has chosen humans to carry out responsibilities on earth with the title of caliph. A caliph is someone who is given the task of carrying out the tasks that have been determined. If humans are caliphs on earth, then they have certain tasks according to the tasks that have been given by Allah while humans are on earth. In this case, it also includes the mandate or task of caring for the earth. Humans have the greatest obligations and responsibilities towards the environment compared to other creatures because humans were created as caliphs.

Surah al-Anfāl verse 60 teaches about the importance of preparation and resilience in facing challenges. This principle can be translated into climate change adaptation actions by strengthening infrastructure and increasing community resilience to climate disasters. The opinion that states that “fortress of defense” can be interpreted as community resilience in facing the impacts of climate change. This resilience includes strengthening infrastructure, early warning systems, and mutually supportive social networks. Just as a fortress protects against attack, a resilient community can protect itself from the impacts of natural disasters that are increasingly occurring due to climate change. In Tafsir Al-Misbah's, the command to prepare strength guides how we can face the challenges of climate change with a holistic approach. This includes physical preparation, mastery of knowledge and skills, and application of moral values that are the basis for our actions as stewards of the earth. Adapting to climate change is not only a personal responsibility, but also a collective effort that requires collaboration from various parties in society.

QS. Al-An'ām verse 99, regarding reforestation. Plants produced from reforestation provide many benefits, such as providing oxygen, protecting the soil from erosion, regulating micro-temperatures, and providing habitat for various species. This is very important in dealing with the negative impacts of climate change. By planting trees and other plants, we not only contribute to environmental health but also to food security and sustainable natural resources. Reforestation is not only a beneficial environmental action but also a social charity that brings rewards. By reforesting, we not only contribute to the health of the planet but also build awareness of our responsibilities as caliphs on earth (Wahyudi et al., 2022).

Conclusion

This study confirms that the Qur'an has comprehensive guidance on mitigating and adapting to climate change and efforts to maintain ecological balance. The principles contained in the Qur'an, such as moderation in the use of resources (QS. Al-A'rāf: 31), sustainable management (QS. Hūd: 61), readiness and resilience to environmental challenges (QS. Al-Anfāl: 60), and reforestation and nature conservation (QS. Al-An'ām: 99), offer relevant and applicable guidelines for responding to environmental crises. These principles not only focus on direct practice but also include moral and spiritual dimensions that strengthen human responsibility as caliphs on earth.

However, this study still has limitations. The approach used is qualitative and focuses on literature studies with thematic interpretation analysis. This has resulted in the absence of empirical studies that describe the extent to which these principles are implemented in environmental policies at the local and global levels. In addition, the contribution of modern technology that is in line with the ecological values in the Qur'an has not been part of the discussion in this study.

Therefore, further empirical research is needed to evaluate the application of ecological principles in the Qur'an in Muslim communities in various regions. Future research is also expected to explore the integration of environmentally friendly technology with the spiritual values contained in the Qur'an. In addition, studies on the development of public policies based on ecological principles in the Qur'an and the development of environmental education curricula based on the teachings of the Qur'an are important agendas to be studied further. With a more comprehensive approach, future research is expected to provide significant contributions to efforts to maintain ecological balance and overcome the challenges of climate change.

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