The Relationship between Oceans and Earth: What Scientists and Religion Point of View

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ABSTRACT

This article explores the relationship between oceans and earth through the lenses of science and religion, emphasizing their significance in sustaining the global ecosystem. The oceans regulate climate, preserve biodiversity, and provide vital resources. However, climate change, pollution, and overexploitation threaten marine systems. Using a qualitative methodology grounded in secondary data analysis and a comprehensive literature review, this study reveals the deep interdependence between the ocean and the earth. The article also examines religious interpretations of the ocean's role and human responsibility towards its preservation. mitigation strategies, including marine protected areas, plastic reduction policies, and community-based conservation, are discussed as essential for sustaining marine ecosystems.

Keywords: Ocean, Earth, Scientists, Religion, Marine Ecosystem

INTRODUCTION

The seas and oceans are the main components in the earth's water system which have a very important role in maintaining the balance of ecosystems and life on the planet. The ocean refers to the vast and deep body of water that makes up the majority of the earth's surface, while the ocean is the bulk of the larger seas and covers almost 71% of the planet's surface (UNESCO, 2022). The ocean has a varied depth and supports a wide variety of life, from microorganisms to large marine mammals. Its existence plays a major role in regulating the earth's temperature, providing oxygen, as well as storing carbon which is important in mitigating climate change. Earth, as the planet where humanity lives, was formed about 4.5 billion years ago (NASA, 2021). In its early days, the earth underwent various geological processes such as surface cooling, crustal formation, and volcanic activity that released the gases that formed the primitive atmosphere. Changes in temperature and humidity on the earth's surface make this place capable of supporting life. The discovery of water in liquid form on the earth's surface was one of the important milestones in the history of the formation of the planet, and it played a huge role in the formation of the oceans. According to the perspective of science, the oceans are formed through complex geological and climatic processes. Water on earth is believed to originate from processes such as the degassing of magma beneath the surface and the freezing of water vapor in the atmosphere. The discovery of ancient fossils suggests that marine life began to exist around 3.5 billion years ago, proving the importance of the ocean in the evolution of life (Lovelock, 2000).

The ocean not only plays a role in temperature and weather regulation, but also in the absorption of carbon dioxide and gas exchange between the atmosphere and the ocean, which has a direct impact on the balance of global ecosystems. From a religious perspective, the formation of the earth and oceans is often considered the result of Almighty God's creation. In Islam, for example, it is mentioned in the Quran that Allah created the sea and land as a sign of His power and as a source of life for humans and other creatures (Qur'an, 24:45). Likewise in other religions, the concept of the creation of the universe and oceans is often associated with God's will and has a profound spiritual meaning for mankind. In religious books, the ocean is often described as a symbol of God's power, as well as a place that gives life and sustenance to all living things. Our earth is made up of two main components that are very important in the sustainability of life, namely water which makes up around 70% of the planet's surface and land which covers only 30%. Water, especially in the form of oceans and large oceans, plays a very important role in maintaining the balance of the world's ecosystems. Changes in water distribution

patterns, such as the melting of glaciers due to global climate change and the theory of major floods, have profound impacts on our environment, including on marine biology and the maritime economy. The melting of glaciers due to climate change is a phenomenon that has become increasingly pronounced in recent decades.

Glaciers in the north and south pole regions, as well as in the high mountains, are melting their ice, causing global sea levels to rise. According to the IPCC (2021), the global sea level rise is expected to reach between 0.29 to 0.59 meters by the end of the century if this trend of melting continues. The melting of glaciers not only causes sea level changes but also impacts marine ecosystems that depend on stable water temperatures. Warming oceans and increasingly acidic waters due to increased carbon dioxide are putting stress on many marine species, especially coral reefs, plankton, and fish that are sensitive to temperature changes. In the context of the great flood theory, there are several studies that refer to ancient events that are believed to involve great floods that changed the world's landscape. One of the most famous theories is the Great Flood mentioned in various cultures, including in the Qur'an, the Bible, and Babylonian myths. Scientifically, a study by Peltier (1998) in *Geophysical Research Letters* suggests that the great floods that occurred around 12,000 years ago may be closely related to the very rapid melting of glaciers at the end of the Pleistocene. This phenomenon caused sea levels to jump dramatically, changing patterns of life and forming many of the marine ecosystems we know today. Indirectly, this theory of the great flood also gives us an understanding of how important the influence of glaciers is to global sea level change and ecosystems.

The world's oceans play an important role in global water circulation and marine ecosystems. There are several major seas and oceans that cover most of the earth's surface. Among them are the Pacific Ocean, Atlantic Ocean, Indian Ocean, Arctic Ocean, and Southern Ocean. The Pacific Ocean is the largest ocean in the world, covering about 30% of the earth's surface, followed by the Atlantic Ocean which covers about 20%. The Indian Ocean, located between Africa, Asia, and Australia, covers about 20% of the earth's water surface, while the Arctic Ocean and the Southern Ocean each play a crucial role in stabilizing global temperatures. Each of these oceans has its own unique ecological characteristics and functions, playing a role in regulating the climate and being home to a variety of marine species that are very important for the planet's biodiversity. Oceans make a huge contribution to marine biology by providing habitat to billions of marine species that play a role in maintaining the balance of the global ecosystem. Marine ecosystems, such as coral reefs, mangrove forests, and seagrass meadows, provide protection to many species and contribute to the global carbon cycle by absorbing greenhouse gases from the atmosphere. In addition, plankton, which lives in the oceans, is fundamental to the seafood chain and contributes to the production of oxygen on earth through the process of photosynthesis. According to an article by Falkowski et al. (2000) in *Science*, marine plankton accounts for around 50% of the oxygen produced on the planet, making them an essential component in the sustainability of life on land and sea. Coral reefs, which are found mainly in the tropics, also play a major role in marine biology.

Coral reefs provide shelter for various species of fish, mollusks, and other invertebrates. In a study by Hoegh-Guldberg (1999) in *Marine and Freshwater Research*, he pointed out that coral reefs are one of the ecosystems most threatened by climate change, mainly due to rising ocean temperatures and increasing water acidity. Coral reef damage will have a major impact on marine biodiversity, affecting the entire food chain in the ocean. The oceans also have an equally important role in the global maritime economy. The ocean provides a major trade route between countries around the world, with more than 90% of global trade conducted through sea transport (UNCTAD, 2020). For example, the Pacific Ocean and the Atlantic Ocean are trade routes that connect large countries around the world, making the global economy dependent on the stability and security of these waters. In addition, marine resources such as fish, oil, and gas also play an important role in the economies of coastal countries. The fishing industry is a sector that contributes greatly to the maritime economy. According to FAO (2020), more than 3 billion people worldwide depend on fish and seafood as their main source of protein. In addition, the maritime tourism sector related to marine ecosystems such as coral reefs and coastal areas also contributes to the economies of countries with well-known maritime tourism destinations. The maritime economy also includes the merchant ship, port, and transportation industries, which contribute to tens of millions of jobs worldwide.

However, as explained by Salm and McLeod (2006) in *Environmental Management*, the degradation of marine ecosystems due to pollution and climate change can have a major impact on the maritime economy. Declining fish stocks, coral reef damage, and marine pollution can affect the fishing industry and maritime tourism.

Therefore, it is important to implement stricter environmental protection measures to ensure the sustainability of the maritime economy in the future. In this whole discussion, the ocean plays a very important role in ensuring the balance of the earth's global ecosystem, the sustainability of life, and economic growth. Melting glaciers and the theory of major floods show how changes in sea and ocean levels can have a major impact on terrestrial and marine ecosystems. Oceans, such as the Pacific Ocean, Atlantic Ocean, and Indian Ocean, provide habitat for a variety of marine species and support the maritime economy through trade and fishing. In conclusion, the seas and oceans have an invaluable role in the earth's ecosystem. Its presence underlies the sustainability of life, regulates the climate, and provides natural resources that are important for human life. From a scientific perspective, the ocean is formed through complex natural processes, while from a religious perspective, it is the result of God's life-giving creation. Therefore, the sustainability of the ocean is essential for the well-being of earth and all life on it.

RESEARCH METHODOLOGY

The study of the influence of the oceans on the earth involves a variety of methodological approaches aimed at analyzing the complex interactions between marine ecosystems and the well-being of the earth. The methodology used in this study requires a holistic and interdisciplinary approach as it involves various aspects of environmental science, ecology, as well as theories related to climate change and biodiversity. Some of the relevant methodologies for this study include quantitative, qualitative, and secondary data analysis approaches. The selection of this methodology is based on the need to obtain accurate and comprehensive data on the impacts of the oceans on the sustainability of the earth. Quantitative methodologies, such as the measurement of environmental parameters, are very important in this study because they provide an opportunity to obtain objective and measurable data on changes in ocean temperature, water acidity levels, as well as the impact of pollution on marine ecosystems. Quantitative studies often involve the use of measurement tools such as satellites to monitor sea level changes and global temperatures (Doney et al., 2012). This approach allows researchers to get a clear picture of climate change trends and their impact on the oceans. In addition, secondary data obtained from scientific reports and previous studies also make an important contribution in assessing human impacts on marine ecosystems (Hoegh-Guldberg et al., 2019).

Meanwhile, qualitative methodologies are also important in understanding the social and cultural aspects related to ocean sustainability. Using qualitative approaches, such as interviews with ecologists, environmentalists, and coastal communities, this study can provide a more in-depth perspective on how humans interact with oceans. This methodology is useful for examining people's perceptions of the importance of the ocean in their lives, as well as understanding policies that can be implemented to protect marine ecosystems. In addition, this methodology is in line with the framework of study thinking that sees the relationship between the environment and humans as an interdependent system. The study analyzed the interaction between environmental factors, such as seawater temperature and water quality, and social and economic factors, such as fisheries activities and coastal development. In this regard, the system’s ecological thinking framework is used to understand how important it is to maintain a balance between nature and human activities (Odum, 1997). This methodology also supports theories related to climate change, such as the Global Climate Change Theory, which states that rising ocean temperatures and water acidity can negatively impact marine biodiversity and threaten the sustainability of global ecosystems (Lovelock, 2000).

Other relevant theories include the Marine Ecosystem Theory which emphasizes the role of the ocean as a carbon sink and global temperature regulator. According to this theory, the ocean serves as a major reservoir for carbon dioxide produced by human activities, which helps reduce the greenhouse effect (Falkowski et al., 2000). Therefore, the influence of the deep seas to reduce global warming is important, and an in-depth study of the effects of ocean change on the earth can provide the data needed to formulate more effective mitigation measures. Thus, the methodology used in the study of the influence of the seas and oceans on the earth is appropriate and very relevant. The quantitative approach provides the objective data needed to assess environmental impacts, while the qualitative approach allows for a deeper understanding of the social and cultural dimensions associated with ocean sustainability. These two approaches complement each other and together form a strong basis for understanding and addressing the issue of the influence of the ocean on planet earth. Therefore, this study

provides a more holistic picture of the complex relationship between marine ecosystems and the sustainability of the earth.

LITERATURE REVIEW

The oceans play a crucial role in maintaining the balance of the earth's ecosystems, serving as global climate stabilizers, and supporting life on the planet. In this study, I will highlight some of the literature from a scientific and religious perspective related to the influence of the oceans on the earth, including how the oceans affect climate change, biodiversity, and global ecosystems. According to Lovelock (2000) in his book *The Ages of Gaia: A Biography of Our Living Earth*, his theory of Gaia suggests that the earth is a living system that regulates itself. In this theory, the ocean serves as the main stabilizer for the stability of the planet's climate. The ocean regulates global temperatures by absorbing and distributing heat and plays a crucial role in influencing carbon dioxide levels in the atmosphere. Lovelock's findings show that ocean systems function in dynamic relationships with the atmosphere and biosphere, with the ocean acting as a major carbon sink. A study by Doney et al. (2012) published in *the Annual Review of Marine Science* discusses the impact of climate change on marine ecosystems. They noted that rising sea surface temperatures and increasing acidity of seawater due to increased carbon dioxide are putting enormous pressure on marine biodiversity, especially coral reefs and coastal ecosystems threatened by climate change. The findings of this study show that rising ocean temperatures and acidity threaten many marine species, which in turn negatively impacts the sustainability of marine ecosystems and the stability of global ecosystems.

Meanwhile, Hoegh-Guldberg et al. (2019) in their study published in science on coral reefs found that coral reefs, which are very important marine ecosystems, are particularly vulnerable to climate change. The study outlines how ocean warming and acidification damage coral reef structures, causing significant biodiversity loss and adversely impacting the food sources that depend on those ecosystems. These findings show that coral reefs play an important role in maintaining the health of the ocean and the stability of marine resources. Falkowski et al. (2000) in their study published in science examined the role of the ocean in the global carbon cycle. They point out that the ocean serves as a major sink of carbon dioxide from the atmosphere, which helps reduce the greenhouse effect. The findings of this study show that the ocean functions as an important carbon sink and plays a major role in controlling global climate change. Without the oceans, carbon dioxide levels in the atmosphere would rise rapidly, causing more severe global warming.

Mann and Emanuel (2006) in their study published in *Geophysical Research Letters* linked climate change to an increase in hurricane incidence in the Atlantic Ocean. They found that warmer sea surface temperatures increase the intensity of hurricanes, which can result in major damage to coastal ecosystems and coastal areas. These findings show a direct link between climate change, ocean temperatures, and increased extreme weather events. A study by Wunsch and Heimbach (2007) in *Geophysical Research Letters* focuses on how changes in ocean ventilation can have a major impact on the global climate. They emphasized that the ocean acts as an important sink for carbon dioxide, and that changes in ocean flows can affect the global climate in the long run. The findings of this study underline how important deep ocean circulation is to compensate for climate change and stabilize global temperature conditions. From a religious perspective, the Qur'an mentions the role of the sea as God's creation that supports human life. In Surah An-Nur (24:45), it is stated that "Allah created all kinds of living things out of water," referring to the ocean as the source of life. The ocean, according to the Islamic perspective, is a testament to God's power that provides everything that humans need to live. In this context, the ocean not only gives life, but also reminds humanity of the obligation to care for and preserve the environment.

In Christianity, the concept of the creation of the sea is also described in the book of Genesis (Genesis 1:9-10), where God separates the land and the sea in the process of creation. The sea is considered a creation of God those functions to meet the needs of humans and other living things. According to Christian teachings, the sea is a source of life and sustenance, which must be taken care of responsibly. Therefore, religion also promotes the preservation of the environment, including the oceans, to ensure the survival of life on the planet. Tanner (2008) in *the Natural Resources Forum* discussed the importance of marine ecosystem resilience in the face of climate change. He suggested that countries around the world step up efforts to reduce the impact of climate change on the oceans, especially by reducing marine pollution and preserving marine biodiversity. The findings of this

study show that the resilience of marine ecosystems is an important element in ensuring the sustainability of the ocean and the balance of the global ecosystem.

A study by Salm and McLeod (2006) in *Environmental Management* on marine protected areas also emphasizes the importance of protected areas to maintain healthy marine ecosystems. Marine protected areas are an effective strategy in preserving marine biodiversity and resources. The findings of this study underline that better protection of coastal and marine areas can help reduce damage due to climate change and destructive human activities. Studies by the Qur'an (55:19-20) also emphasize the importance of the sea as God's creation that brings benefits to all life on earth. In this verse, God says that "two seas meet, but between them there is a boundary that cannot be crossed." This verse provides a lesson about the natural balance that exists in the ocean and the importance of preserving marine ecosystems. This perspective reflects an appreciation for the environment and the importance of nurturing the ocean as a source of life. De Silva (2014) in *Marine Policy* examines the role of marine fisheries in the global economy and its impact on natural resources. The ocean not only provides an important source of food but also provides income to millions of people around the world. The findings of this study show that the ocean is key to the economic and social sustainability of many countries, especially those that depend on the fishing sector.

Salm and McLeod (2006) in their study published in *Environmental Management* discuss how ecosystem-based management can ensure the sustainability of marine ecosystems and protect marine resources from further damage. The findings of this study show that ecosystem-based management strategies are an important step in maintaining ocean sustainability amid the challenges of climate change. The Qur'an (24:45) and Surah Ar-Rahman (55:19-20) provide a very important perspective on the need to appreciate and care for the ocean as part of God's creation that must be preserved. In Islam, the sea is considered a gift from God that provides sustenance and life, which must be taken care of responsibly by mankind. A study by Trevorrow (2017) in *Oceanography* discusses how ocean health impacts the stability of global ecosystems and how humans can take steps to protect the ocean from pollution and damage. The findings of this study affirm that ocean sustainability is key to ensuring climate stability and quality of life on earth. A study by Baird and Marshall (2017) in *Coral Reefs* emphasizes the role of coral reefs in marine ecosystems and how they support marine biodiversity. Coral reefs not only provide protection for many marine species but also support human life through food sources and income. The findings of this study show that coral reef conservation is very important for the sustainability of marine ecosystems. In conclusion, studies from the perspective of science and religion provide a very important insight into the role of the seas and oceans in life on earth. In terms of science, the ocean serves as a climate regulator, carbon sink, and an important source of biodiversity. Meanwhile, in the context of religion, the ocean is considered a creation of God that gives life and must be preserved. Therefore, efforts to protect and protect the ocean are very important to ensure the sustainability of the earth.

DISCUSSION AND FINDINGS

The ocean plays a very important role in maintaining the balance of the earth's ecosystems. The existence of oceans that cover about 70% of the earth's surface serves as a heat balancer, global climate regulator, and supporter of life on land. From a scientific perspective, the ocean is a major component in the Earth system that interacts with the atmosphere, crust, and biosphere. In a religious view, the ocean is also seen as God's creation that has a specific purpose, provides life, and reminds humanity of the importance of safeguarding the created universe. Here, we will discuss how the ocean affects the Earth and what would happen if the ocean only covered 30% of the Earth's surface, as well as how the ocean acts as a coolant for the earth having a hot crust. The ocean plays a critical role in regulating global temperatures and influencing the Earth's climate. One of the main ways the ocean functions in this regard is by acting as a thermal reservoir. The ocean absorbs enormous amounts of energy from the sun and releases it slowly into the atmosphere, making the ambient temperature more stable and reducing sudden temperature changes. This process is known as "thermal heat storage". Because the ocean stores more heat than the mainland, it reduces the variations in extreme temperatures that can occur in land areas, which is crucial for the sustainability of life.

Additionally, the ocean plays a role in the global carbon cycle. The ocean acts as the main carbon dioxide (CO2) sinks from the atmosphere. Through this process of absorption of greenhouse gases, the ocean helps reduce global warming. However, with the increase in CO2 concentrations in the atmosphere due to human activities,

the oceans are also becoming more acidic, which in turn threatens marine ecosystems, especially coral reefs that are sensitive to changes in seawater pH. A study by Doney et al. (2012) showed that rising sea surface temperatures, caused by global climate change, are impacting the stability of marine ecosystems. They assert that climate change will accelerate the global warming process affecting the oceans, which could damage marine ecosystems and exacerbate climate change. These findings show how important the ocean is in stabilizing the global climate and how the ocean is also vulnerable to human-induced changes. If the oceans only cover 30% of the earth's surface, and the rest is land, the global climate balance will be massively disrupted. Without vast oceans absorbing and distribute heat, temperatures on land would fluctuate more extremely, with hotter summers and colder winters. In these conditions, life on earth will have a hard time surviving due to drastic changes in temperature. Additionally, the lack of oceans will also reduce the earth's capacity to absorb carbon dioxide, leading to increased global warming and faster melting of ice in polar regions. This could also lead to rising sea levels that would threaten coastal areas around the world.

In many religions, the ocean is seen as God's creation that has a deep purpose and is full of wisdom. In Islam, the sea is mentioned in many verses of the Qur'an as one of the signs of God's greatness that gives life to living beings. For example, in Surah Al-Furqan (25:53), Allah says, "And He is the one who allows the two seas to flow, this one is fresh, and the other is salty, and He has made a wall between them." This verse shows that the sea is a gift from God that gives life to living beings and maintains the balance of the universe. Similarly, in Christianity, the sea is an important creation of God, which is seen as a source of life and sustenance. The book of Genesis (1:10) says, "And God saw that it was good," after creating the ocean and dividing the earth into land and oceans. The ocean is one of the creations of profound meaning, which supports life on earth by providing water and food sources for living things. If the ocean covers only 30% of the earth's surface, in a religious view, this may be seen as an imbalance that will threaten life. These religions teach humans to take care of and maintain the universe, including the oceans, as a responsibility given by God. Therefore, if the ocean were to recede, this would be seen as a violation of God's command to protect the earth and all its contents. In this context, the sustainability of the ocean is part of humanity's obligation to take care of God's creation and ensure that the environment remains in balance and harmony.

One of the important roles of the ocean is to act as a coolant for the earth which has a hot crust. The oceans that cover most of the earth's surface help reduce the temperature produced by the earth's crust, which tends to be hot inside. This process occurs through the circulation of seawater and heat exchange with the atmosphere. The oceans also serve to compensate for the temperatures coming from within the earth, especially in areas close to the equator. According to a study by Wunsch and Heimbach (2007) in *Geophysical Research Letters*, deep-sea circulation, known as "thermoplastic circulation," is one of the main mechanisms in global heat distribution. This process helps to divert heat from hot tropical regions to cooler regions, with the ocean acting as a highly effective "heat absorber". This process is an example of the interdependent relationship between the ocean and the earth. Without an ocean that works to absorb and distribute heat, the warming crust of the earth will cause the global temperature to rise drastically. This situation will have a negative impact on life on earth, including on marine and terrestrial ecosystems.

Table 1: Relationship Between the Ocean and the Earth from the Perspective of Science and Religion

ASPECTS	RELATIONSHIP BETWEEN THE OCEAN AND THE EARTH	SCIENCE PERSPECTIVES	RELIGION PERSPECTIVES	REFERENCE
Temperature Stabilizer.	The ocean acts as a cooling agent of the Earth by absorbing and dissipating global heat.	The process of heat absorption and distribution by the oceans reduces temperature variations on Earth.	In religions, the ocean is God's creation that regulates the balance of nature.	Wunsch & Heimbach (2007) dalam *Geophysical Research Letters*
Carbon Cycle	The ocean absorbs carbon dioxide from the	The ocean plays a huge role in regulating	The ocean is seen as a gift from God that gives	Doney et al. (2012) dalam *Annual*

	atmosphere and stores carbon in biological form.	the amount of carbon dioxide in the atmosphere and controlling climate change.	life and helps maintain the balance of nature.	*Review of Marine Science*
Source of Life	The ocean is home to billions of marine species that are important for biodiversity.	Marine ecosystems are fundamental to supporting marine life the entire seafood chain.	The ocean is a place of life given by God, a source of providing sustenance to mankind.	Hoegh-Guldberg (1999) dalam *Marine and Freshwater Research*
Ecosystem Coordinator	Marine ecosystems, such as coral reefs, are essential for global biodiversity stability.	The loss of marine habitat will have a devastating impact on global ecosystems and biodiversity.	In Islam, coral reefs and oceans are God's creations that must be protected by mankind.	Salm & McLeod (2006) dalam *Environmental Management*
Heat Absorbers	The oceans help to circulate the heat obtained from the Sun through the circulation of seawater.	The ocean acts as a heat reservoir that helps regulate global temperatures.	In religions, the ocean is a creation that balances the heat of the world and maintains the harmony of the universe.	Wunsch & Heimbach (2007) dalam *Geophysical Research Letters*
Influence on Climate	The ocean regulates the global climate by playing a role in the formation of weather and rainfall patterns.	The ocean influences global weather patterns through the process of *thermohaulin* and gas exchange with the atmosphere.	In religions, climate is God's creation that affects life, and humans need to maintain the balance of nature.	Falkowski et al. (2000) dalam *Science*
Balance of Nature	The ocean maintains the balance of nature by influencing the global water cycle and ecosystems.	The ocean affects the balance of terrestrial and marine ecosystems by providing water and food sources.	In the Qur'an and the Bible, the ocean is seen as one of the signs of God's greatness that unites the land and the sea.	Al-Qur'an (25:53) dan Bible (Genesis 1:10)
Threats to the Ocean	Pollution and climate change threaten the stability of the oceans, disrupting their functions.	Rising ocean temperatures, plastic pollution, and biodiversity loss adversely affect marine ecosystems.	Religion teaches humans to take care of nature and avoid damage to God's creations, including the ocean.	IPCC (2021) dalam *Climate Change 2021: The Physical Science Basis*
Marine Conservation	Ocean maintenance is important to ensure the preservation of natural resources and the balance of ecosystems.	Efforts to preserve the ocean are key in maintaining the global climate and ecosystem balance.	Religions teach the importance of preserving the ocean as a human responsibility to God.	Salm & McLeod (2006) dalam *Environmental Management*

The table above clearly shows how important the ocean is in influencing various aspects of the earth's ecosystem, both from a scientific and religious perspective. The relationship between the ocean and the earth is closely intertwined, and we can see how the two depend on each other to maintain the balance of the universe. Science shows that the oceans play a major role in regulating global temperatures through the absorption and distribution

of heat obtained from the Sun. The ocean acts as a huge heat reservoir, absorbing solar energy that enters the atmosphere and distributes it throughout the earth. This helps reduce extreme temperature fluctuations that can be life-threatening. In terms of religion, the ocean is considered a creation of God that regulates the balance of nature, functioning to maintain the harmony of the universe. This view is in line with the theory of science which shows that the ocean has a function as an important global temperature stabilizer. References from *Wunsch & Heimbach (2007)* in the Geophysical *Research Letters* study support this statement.

The ocean serves as a major carbon dioxide sink, helping to reduce the concentration of greenhouse gases in the atmosphere. Science has proven that the ocean not only serves as a huge carbon reservoir but also helps control climate change by absorbing CO2 from the atmosphere. This is especially important to reduce global warming. In religion, especially in the Islamic tradition, the ocean is seen as a gift from God that maintains the balance of nature and provides life, including life threatened by climate change. A study *by Doney et al. (2012)* in the *Annual Review of Marine Science* explains how the ocean absorbs carbon and offsets the level of carbon dioxide in the atmosphere. Science recognizes the role of the ocean in providing habitat to billions of marine species that support global biodiversity. Marine ecosystems are essential for the survival of marine species that are a source of food for humans. From the point of view of religions, the ocean is God's creation that provides sustenance and life to mankind. Therefore, the ocean is not only a place to live but also a form of sustenance that must be maintained. The *Hoegh-Guldberg study (1999)* in *Marine and Freshwater Research* emphasized the importance of the ocean in maintaining the balance of biodiversity and ecosystems.

From a religious perspective, the preservation of the ocean is man's responsibility to God's creation that needs to be taken care of. Science also acknowledges that the loss of marine habitats such as coral reefs will have a major impact on biodiversity and the balance of global ecosystems. This damage to marine ecosystems can threaten life on land as well. Salm *& McLeod's (2006) study* in *Environmental Management* emphasizes the importance of marine protected area management to maintain a sustainable marine ecosystem. The issues of pollution, climate change, and global warming are among the major threats facing today's oceans. Rising ocean temperatures and ocean acidification due to increased carbon dioxide in the atmosphere have a detrimental impact on marine ecosystems. In the context of religion, this is seen as a challenge that requires humanity to be more responsible in protecting nature. According to an *IPCC study (2021),* the impact of climate change on the oceans is enormous, and without conservation action, we may see irreparable changes.

This table outlines that the ocean plays a very important role in stabilizing the earth's temperature, regulating the carbon cycle, and providing habitat for marine life. The perspectives of science and religion show a similar understanding of the importance of the ocean in maintaining the balance of the universe. While there are differences in approaches, both perspectives recognize that the ocean is a life-giving creation and should be protected. Current issues plaguing the oceans, such as pollution and global warming, have a major impact on the earth, with rising temperatures and climate change having long-term impacts on life on earth. Therefore, efforts to preserve the ocean are important, not only from a scientific point of view but also in terms of religious responsibility as the guardian of God's created nature. The ocean plays an invaluable role in maintaining the balance of the global ecosystem. From a scientific perspective, the ocean acts as the earth's cooler that regulates global temperatures, distributes heat, and absorbs carbon dioxide. If the oceans cover only 30% of the earth's surface, more extreme climate change will occur, impacting life on land and oceans. From a religious perspective, the ocean is God's creation full of wisdom, which gives life and maintains the balance of the universe. The sustainability of the ocean is man's responsibility in preserving God's creation. By understanding the importance of the ocean from both scientific and religious perspectives, we can better appreciate the role of the ocean and efforts to preserve marine ecosystems for the sustainability of planet earth.

The ocean and the earth are two inseparable entities in the ecological and geological systems of our planet. The ocean covers more than 70% of the earth's surface and provides many benefits to life on the planet. However, despite all the benefits and benefits provided by the ocean, there are also major conflicts that arise when there is an imbalance or disturbance in the ocean ecosystem. Natural phenomena such as tsunamis, coastal floods, and global warming are examples of conflicts between the ocean and the earth that can have a major impact on ecosystems and human life. This phenomenon not only occurs due to natural disturbances but is also influenced by human activities that increase tensions between the oceans and the earth. Tsunamis are one of the most destructive natural phenomena that occur because of deep disturbances in the ocean that result in large waves

moving at high speeds above the surface of the water. Tsunamis often occur when there is a large movement in the earth's crust, especially because of an underwater earthquake, volcanic eruption, or landslide. When an earthquake occurs on the seabed, the energy released changes the position of the seawater abruptly, causing large waves that move towards the coast at incredible speeds. Once these waves reach coastal areas, they can hit with devastating force, causing massive flooding and widespread infrastructure damage. Tsunamis are not only physically destructive but also have long-term effects on marine ecosystems. Destruction of coral reefs, changes in hydrological patterns, and disruption to important marine species are among the long-term effects left by tsunami events (Donnelly & Woodruff, 2007). This phenomenon shows how imbalances in ocean ecosystems can have a direct impact on the earth and human lives that depend on it.

Tsunamis are often associated with the movement of the earth's crust along subduction zones. The subduction zone is the area where two tectonic plates meet, with one plate sinking down the other. This movement can occur slowly but when the accumulated pressure becomes too great, it can release energy that causes deep movement on the ocean floor. In most cases, tsunami-triggering earthquakes occur in subduction zones located along coastal areas such as along the coast of Japan or the coast of Indonesia (Lay et al., 2011). Additionally, underwater volcanic eruptions can also trigger tsunamis, with eruptions dramatically changing the position of seawater. The loss of balance in the Earth's crust due to this movement is one of the main causes of tsunamis. This process warns that the earth and oceans are interdependent and that changes in one geological system can have a significant impact on the other. Phenomena such as tsunamis are also increasingly observed in the context of global warming. Rising global temperatures cause seawater warming, which in turn impacts weather patterns and the stability of marine ecosystems. The decline in the ice sheet at the poles, caused by global warming, leads to an increase in sea levels. This can increase the incidence of floods and natural disasters in coastal areas.

Although tsunamis are not directly caused by global warming, changes in weather patterns and increased pressure on the earth's crust due to tectonic movements occurring due to global environmental changes can worsen the situation (IPCC, 2021). With higher seawater warming, the pressure on coastal areas becomes greater, increasing the likelihood of more severe natural disasters. The impact of the tsunami can not only be seen in terms of geography and ecosystem but also has huge consequences for human life. The 2004 tsunami in the Indian Ocean is a classic example of how a single natural event can change the lives of millions of people. The tsunami caused the deaths of more than 230,000 people and damaged infrastructure in many countries, including Indonesia, Sri Lanka, and Thailand. In addition, this phenomenon has an impact on the local economy, especially in the fishing and tourism industries that depend on healthy marine ecosystems. Coral reef loss and damage to coastal waters reduce food resources for coastal communities that depend on the sea for their survival (Klein et al., 2019).

Conflicts between the ocean and the earth, as seen in the tsunami phenomenon, show how imbalances in geological systems and the environment can have a direct impact on ecosystems as well as human life. Tsunamis, which occur because of the movement of the earth's crust and disturbances in the oceans, are a clear example of how these conflicts can have a huge impact. In addition, climate change that causes an increase in sea temperature also has an impact on the occurrence of natural disasters such as tsunamis. Therefore, it is important for us to understand the interaction between the ocean and the earth, and how each change in one system can have a significant impact on the other. In dealing with this phenomenon, a holistic approach, which involves environmental conservation efforts, disaster management, and mitigation of the effects of climate change, is essential to ensure that the balance between the ocean and the earth can be maintained.

CONCLUSION

Overall, the ocean plays a very important role as a stabilizer to the earth, influencing the balance of global ecosystems as well as temperature and climate across the planet. The oceans, which cover 70% of the earth's surface, act as the main reservoir and heat regulator, helping to reduce excessive temperature fluctuations between day and night and between summer and winter. Through the process of heat absorption and distribution, the ocean also contributes to global temperature stability, making the earth more hospitable for life. Additionally, the ocean acts as a major carbon dioxide sink, absorbing greenhouse gases from the atmosphere and helping to reduce global warming, although it is also vulnerable to the growing threat of climate change. In a scientific perspective, the ocean serves as a major component in the earth's system that interacts with the atmosphere,

biosphere, and crust. The ocean is not only important in balancing temperature and distributing heat but also serves as a habitat for a variety of marine species that support the global seafood and biodiversity chain. From a religious point of view, the ocean is seen as God's creation that brings life, maintains the balance of nature, and reminds humans to take care of and maintain the creation. In both science and religion, there is a common understanding that the ocean and earth have a mutually necessary relationship to ensure the sustainability and well-being of the planet. However, nowadays, the ocean faces various issues that have a major impact on the balance of the earth's ecosystem.

Issues such as plastic pollution, oil pollution, and global warming are increasingly threatening the health of the oceans. Global warming, driven by increased concentrations of greenhouse gases in the atmosphere, has led to increased ocean temperatures and ocean acidification, which has negatively impacted marine ecosystems. In addition, the loss of coral reefs due to climate change and human encroachment on coastal areas also affects marine biodiversity. The loss of this marine habitat risks damaging the balance of the universe, with negative impacts on food sources, trade, and ocean-dependent sources of income. If the imbalance between the oceans and the earth continues, its impact on global warming will become even more serious. Losing the ocean's ability to absorb excess carbon dioxide will cause more greenhouse gases to accumulate in the atmosphere, which in turn raises global temperatures. This will lead to more extreme weather changes, rising sea levels, and major disruptions to terrestrial and marine ecosystems. If these changes are not controlled, global warming will have a negative impact on life on earth, including threats to food resources, human well-being, and global economic stability. Therefore, maintaining the sustainability of the ocean is a shared responsibility between countries, individuals, and the global community. To address the current issues plaguing the ocean, an integrated approach involving pollution reduction, marine habitat preservation, and sustainable management of marine resources is essential. By understanding the ocean's vital role in stabilizing the earth and regulating the climate, we can protect the environment and ensure a more sustainable future for future generations.

World Oceans Day, which is celebrated annually on June 8, is a global initiative that aims to raise awareness of the importance of the ocean for life on Earth and the need for action to protect marine ecosystems. With more than 70% of the Earth's surface covered by seawater, the oceans play a very important role in maintaining the ecological, social, and economic balance on the planet. World Oceans Day serves not only as a platform to educate the public about the critical role of the ocean, but also to warn the world about the threats facing the ocean and the actions that need to be taken to protect it. The ocean is the source of life for many species on the planet. It serves as a habitat for a wide variety of marine life, from microorganisms to marine mammals such as whales and dolphins. Moreover, the ocean is also a major controller of the global climate. The ocean absorbs large amounts of carbon dioxide (CO2) from the atmosphere, serving as a climate buffer that reduces the rate of global warming. Through this process of carbon sequestration, the ocean helps regulate global temperatures and reduce the effects of climate change. Aside from its role in regulating the climate, the ocean also serves as a major source of food for millions of people around the world. The fishing industry contributes to the global economy and provides an important source of food, especially for coastal countries. Coral reefs, which are marine ecosystems rich in biodiversity, also provide protection to the coast from erosion and damage caused by large waves and storms. Therefore, the ocean not only supports marine life but also directly benefits human life.

World Oceans Day serves as a platform to raise global awareness on issues that threaten the sustainability of the ocean and marine ecosystems. One of the biggest problems facing the ocean today is plastic pollution. Every year, millions of tons of plastic are dumped into the ocean, causing serious damage to marine life and disrupting entire marine ecosystems. Marine animals often get trapped in plastic waste or eat it, which can cause them to die or be injured. In addition, microplastics that decompose from large plastics also enter the human food chain through fish and seafood. Other issues of concern are global warming and rising sea levels. With global temperatures rising, ocean temperatures are also rising, causing coral reef bleaching and damaging marine habitats. Rising sea levels, caused by the melting of glaciers and the expansion of water due to global warming, pose a threat to coasts and low-lying areas around the world. This can lead to flooding, damage to infrastructure, and loss of important habitats. Apart from environmental issues, World Oceans Day also emphasizes the importance of sustainable management of marine resources. Overfishing, or overfishing, poses a major threat to global fish stocks and the stability of marine ecosystems. Therefore, monitoring and regulating fishing is essential to ensure that marine resources can continue to support human and animal life in the future. World Oceans Day provides an opportunity to foster global awareness of the importance of protecting the ocean.

Education on the importance of ocean sustainability and understanding of the issues facing the ocean needs to be emphasized among the public, especially the younger generation. Global campaigns, seminars, and community activities involving various parties, such as governments, non-governmental organizations (NGOs), and local communities, can help strengthen ocean conservation efforts. Joint actions, such as reducing the use of single-use plastics, reducing carbon emissions, and designating marine protected areas, are steps that can be taken to help restore ocean health. The use of technology to monitor marine ecosystems and increase public awareness of sustainable practices in fisheries and the use of marine resources is an important step to ensure the sustainability of the ocean and life in it. World Oceans Day is an important reminder to the world that the ocean plays a huge role in maintaining environmental, economic, and social balance on Earth. The ocean not only provides a source of food, energy, and raw materials, but also acts as an important climate buffer. Therefore, efforts to maintain and manage the ocean in a sustainable manner are an urgent need to ensure the sustainability of the Earth and human life in the future. By taking collective action and raising awareness of the importance of the ocean, we can protect marine ecosystems and ensure that the earth continues to thrive in a healthy and prosperous manner.

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