THE THEOLOGICAL IMPLICATION OF OCEANOGRAPHY CONCEPT IN THE QUR'AN

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Abstract: The integration of science and the Qur'an, known as scientific exegesis (*tafsīr 'ilmi*), has emerged as a crucial interpretative model in response to the division between secular and religious knowledge. This study delves into Qur'anic verses related to oceanography, exploring their theological significance and uncovering numerous benefits of the oceans, including their roles as sources of life, climate regulators, livelihood providers, and transportation channels. Additionally, it identifies a remarkable 38 verses discussing oceanography, with 18 of them emphasizing key theological messages such as the exclusive divinity of God, His role as the Creator and Controller of all, the submission of nature to Him, the vastness of His knowledge, and His undeniable greatness. Ultimately, the Qur'anic concept of oceanography reaffirms the existence of God as the Creator and emphasizes humanity's responsibility as His creatures and servants, tasked with worshiping and glorifying Him. This fusion of science and the Qur'an offers valuable alternative interpretations that can enhance human understanding.

Keywords: Oceanography; scientific interpretation; ocean; the Qur'an.

Introduction

Indonesia, with a unique combination of two significant factors, stands out. First, it boasts the largest Muslim population, comprising approximately 207, 176, 162 individuals, or 87.18% of

the population, who hold the Qur'an as their holy book.[1] Second, Indonesia is the world's largest archipelagic nation, covering a total area of 5,193,250 square kilometers, encompassing both land and sea. This strategic positioning is of great significance.[2] Indonesia encompasses 17,499 islands with a combined land area of approximately 7.81 million square kilometers. Within this extensive territory, 3.25 million square kilometers consist of oceans, and 2.55 million square kilometers fall within the Exclusive Economic Zone, leaving around 2.01 million square kilometers of land. With its vast maritime expanse, Indonesia possesses an immense marine potential.[3] In essence, over 62% of Indonesia's archipelago is comprised of ocean, and worldwide, nearly 70% of the Earth's surface is covered by the ocean.[4]

The ocean plays a crucial role in human life and is one of the blessings bestowed by the God.[5] As an abundant source of life, the ocean provides various benefits and demonstrates the greatness of its Creator. In Islam, the Qur'an is considered a perfect source of guidance and contains instructions for all aspects of life,[6] including knowledge about the universe.

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[1] Akhsan Na'im and Hendry Syaputra, *Kewarganegaraan, Suku Bangsa, Agama, Dan Bahasa Sehari-Hari Penduduk Indonesia* (Jakarta: Badan Pusat Statistik Indonesia, 2011), 10. This data is based on the 2010 Population Census, which recorded a population of 237,641,326. Meanwhile, the 2020 Population Census (SP2020) in September noted a population of 270.20 million. The population from SP2020 increased by 32.56 million compared to the SP2010, but the National Statistics Agency has not yet released updated data based on religious classifications. See "Badan Pusat Statistik," https://www.bps.go.id/pressrelease/2021/01/21/1854/hasil-sensus-penduduk-2020.html (accessed on November 17, 2021).

[2] "Letak dan Luas Indonesia," https://sumberbelajar.belajar.kemdikbud.go.id/sumberbelajar/tampil/Letak-dan-Luas-Indonesia-2017/menu4.html (accessed on November 18, 2021).

[3] "KKP, Kementerian Kelautan dan Perikanan," https://kkp.go.id/djprl/artikel/21045-konservasi-perairan-sebagai-upaya-menjaga-potensi-kelautan-dan-perikanan-indonesia (accessed on November 18, 2021).

[4] "Program Studi Sarjana Oseanografi, Institut Teknologi Bandung," https://www.itb.ac.id/program-studi-sarjana-oseanografi (accessed on December 7, 2021).

[5] Siti Kotijah, "Islam dan Lingkungan Hidup di Bidang Pertambangan," *Yuridika*, Vol. 26, No. 2 (2011), 129-149.

[6] Abdul Karim Syeikh, "Rekonstruksi Makna Dan Metode Penerapan Amar Ma'ruf Nahi Munkar," *Al Idarah*, Vol. 2, No. 2 (2018), 1-22.

The Qur'an repeatedly mentions and introduces the sea, ocean, coast, estuaries, and various things related to the sea. It is fascinating that the Qur'an talks extensively about the sea, even though this holy book was revealed in a desert region, and there is no record of any verse being revealed in the middle of the ocean.[7]

However, despite the significant role of the oceans, there has not been much research connecting the concept of oceanography with the theological perspective of the Qur'an. Therefore, the question to be addressed in this study is: What are the theological implications of oceanography concepts from the perspective of the Qur'an? Some previous research on oceanography, such as a study conducted by Ahmad Yusam Thobroni titled *Fikih Kelautan II: Etika Pengelolaan Laut dalam Perspektif al-Qur'an*[8] (Islamic jurisprudence of the sea II: ethics of marine management in the perspective of the Qur'an), has touched on this subject. In line with the title, this research places a greater emphasis on the ethics of exploring the oceans. One of the conclusions of this article is that, until now, the utilization of the ocean has not been optimal, and attention to marine conservation is often neglected, leading to significant levels of ocean pollution. This inappropriate treatment of the oceans occurs due to a secular perspective that does not consider religious values but rather aims solely for financial gain without considering moral considerations and the well-being of humanity, as found in the Western capitalist paradigm.

The journal, written by Asma Wardah Surtahman and Noor Aziera Mohamad Rohana, titled *Etika dan Tanggungjawab Khalifah dalam Pengurusan Laut Menurut Perspektif al-Qur'an*[9] (ethics and responsibility of the *khalīfah* (human being) in ocean management according to the perspective of the Qur'an), discusses the role of humans as stewards in preserving the ocean. This research is

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[7] Lajnah Pentashihan Mushaf al-Qur'an Badan Litbang dan Diklat Kemenag RI with Lembaga Ilmu Pengetahuan, *Tafsir Ilmi: Samudra dalam Perspektif al-Qur'an dan Sains* (Jakarta: Lajnah Pentashihan Mushaf al-Qur'an, 2013), 1.

[8] Ahmad Yusam Thobroni, "Fikih Kelautan II: Etika Pengelolaan Laut Dalam Perspektif Al-Qur'an," *Al-Fikra: Jurnal Ilmiah Keislaman*, Vol. 7, No. 2 (2017), 358.

[9] Asma Wardah Surtahman, Noor Aziera, and Mohamad Rohana, "Etika dan Tanggungjawab Khalifah dalam Pengurusan Laut Menurut Perspektif al-Qur'an," https://jpi.kuis.edu.my/index.php/jpi/article/view/201/146 (accessed on December 7, 2021)

qualitative and descriptive in nature, using the Qur'an as its primary source. The article reveals the extensive coverage of ocean-related knowledge in the Qur'an, encompassing human needs, their relationship with the ocean, and the creation of life within it. In conclusion, humans have a role as stewards responsible for safeguarding and preserving the Earth, especially the ocean. People need to recognize the wisdom behind the creation of the ocean and consistently refer to the Qur'an as a foundational guide and source of knowledge about the ocean and its life, enabling its proper utilization in daily life.

One of the books that discusses maritime matters is *Ayat-Ayat Laut: Al-Qur'an Membimbing Ilmu, Rizki dan Keunggulan Umat* (The Verses of the Sea: The Qur'an Guides Knowledge, Sustenance, and the Excellence of the Ummah). The book, written by Agus S. Djamil, was published in e-Book form in 2012 by Nur Design Alam Publishers, Bandar Seri Begawan. This book is divided into three sections. In the first section, namely "Enlightening Civilization," the author attempts to awaken the scientific awareness of the Muslim community to rebuild civilization. This includes efforts to explore and exploit the vast potential of the sea, which has not been optimally utilized for the benefit of the community and the improvement of people's living standards. In the second section, "Verses of the Sea," the author offers numerous scientific explanations about maritime issues and their relevance to the verses of the Qur'an. The author aims to demonstrate that the verses about the sea contain scientific indications that align with scientific evidence. In the final section, "Grouping the Verses of the Sea," the author groups several verses related to the sea into three categories: monotheism, blessings and sustenance, and lessons. However, the explanations provided are descriptive in nature, lacking scientific explanations according to the principles of interpretation, both analytical and contextual. In other words, the author draws general conclusions contained in those verses, which are then used as titles for the respective verses, even though the lessons contained in those verses could be more than one.

The next book is *Al-Qur'an and Oceanography*, written by Kamarul Azmi Jasmi and Nur Syazwani Mohd Hanafiah, published by Universiti Teknologi Malaysia, Johor Baru, in 2013 in

the Malay-Indonesian language. The book's title is adopted from one of the chapters within the book, alongside "Al-Qur'an and Geology," "Al-Qur'an and Hydrology," "Al-Qur'an and Oceanography," and "Al-Qur'an and Astronomy." In chapter "Al-Qur'an and Oceanography," the authors present verses about the sea that are considered unique and remarkable, such as the separation of two seas. Along with the verses, scientific explanations are also provided. Similarly, other verses related to the sea that are worth detailing are discussed. This discussion is, of course, different from the one presented in this research.

Therefore, it is essential to bridge the understanding between scientific knowledge about the oceans and the Islamic theological perspective contained in the Qur'an. This will assist Muslims in expanding their comprehension of the universe and strengthening their connection to God's creation. Therefore, this article will analyze the theological implications of oceanography concepts from the perspective of the Qur'an.

The research method employed to uncover the theological implications of oceanography concepts in the Qur'an is the method of Qur'anic text analysis. Its aim is to identify verses or concepts related to the sea, oceanography, or aspects of the marine environment by interpreting the theological meaning of these verses. Therefore, this research is more appropriately conducted using a qualitative method with a literature review research type, which involves activities such as reading and examining various documents and literature, such as books, journals, articles, papers, research reports, and other relevant sources of information related to the research topic.[10]

By examining the theological implications of oceanography concepts from the perspective of the Qur'an, this research is expected to provide a broader understanding of the relationship between scientific knowledge and religious teachings in the context of the ocean. These theological implications can serve as a guide for Muslims in preserving and respecting the marine environment, thereby strengthening their sense of connection to the God's creation.

[10] Lynn Silipigni Connaway and Ronald R. Powell, *Basic Research Methods for Librarians*, Fifth Edition (United State of America: Libraries Unlimited, 2010), 221.

Oceanography

Oceanography is a combination of two words that originate from the Greek language "*oceanos*," which means 'sea' or 'ocean,' and "*graphos*," which means description or depiction.[11] In addition to the term "oceanography," there is another term often referred to as "oceanology." Oceanology itself consists of two words (in Greek), namely "*oceanos*" (sea) and "*logos*" (science), which can be simply interpreted as a branch of Earth science that studies the ocean or sea. This field encompasses various topics such as marine organisms and the dynamics of ocean ecosystems, ocean currents, waves, and geophysical fluid dynamics; plate tectonics and seafloor geology, bathymetric conditions, and the circulation of various chemical and physical substances within the ocean and its boundaries.

Oceanography is the study of the sea, with an emphasis on its character as an environment. Its goal is to obtain a sufficiently quantitative description for use in predicting the future with some degree of certainty.[12] Oceanography can also be understood as a science that studies the physical and dynamic phenomena of seawater that can be applied to other fields such as engineering, environmental science, fisheries, marine disasters, and mitigation (management and prevention).[13] A similar view is also expressed by the Indonesian Marine Council, which defines oceanography as the science that studies the dynamics of currents, waves, and sea winds, upwelling processes, seafloor topography conditions, inter-island traffic, and their influences.[14]

Oceanography studies encompass (1) the description of temperature, salinity, density patterns found in the sea, and the processes that explain their distribution; (2) the study of water movements, such as waves, tides, currents, and the processes that cause them; (3) the exchange of energy and momentum between the sea and the atmosphere; (4) the specific properties of seawater,

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[11] Agus Setiawan, "Pengenalan Data Oseanografi," *J. Hidrosfir*, Vol. 2, No. 3 (2003), 85-94.

[12] Robert H. Stewart, *Introduction to Physical Oceanography* (Texas: A&M University, 2008), 8.

[13] "Program Studi Sarjana Oseanografi - Institut Teknologi Bandung."

[14] Rizald Max Rompas, Sahala Hutabarat, and Julius Robert Rompas, *Pengantar Ilmu Kelautan* (Jakarta: Sekretariat Dewan Kelautan Indonesia, 2008), 3.

such as the propagation of sound and light energy.[15] Oceanography is not a pure science but is a fundamental science like Geology, Physics, Chemistry, Biology, and Meteorology. Nevertheless, Oceanography is typically divided into four branches: First, Geological Oceanography, which studies the origin of the oceans. Second, Physical Oceanography, which examines the relationships between physical properties occurring within the ocean and those between the ocean, the atmosphere, and the land. Third, Chemical Oceanography, which studies the chemistry occurring within and at the bottom of the sea, as well as analyzes the properties of seawater itself. Fourth, Ecological Oceanography (Marine Biology), which studies all organisms living in the ocean, including tiny organisms (plankton) and larger animals and plants.[16]

The science of Oceanography itself began to rapidly develop in the early 20th century, between 1907 and 1911. During this time, a person named Otto Krummel published a book titled "Handbuch der Ozeanographie," which significantly influenced the general public's interest in maritime sciences and knowledge. Additionally, the commencement of the North Atlantic Expedition in 1910, which lasted for four months and was led by Sir John Murray and Johan Hjort, became one of the largest oceanography and marine zoology research projects of its time. This expedition subsequently led to the publication of the classic book *The Depths of the Ocean* in 1912. From there, modern Oceanography has continued to evolve to the present day.

The Qur'an uses two terms that are interpreted as 'sea' or 'ocean.' The first term is "*al-yamm*," which is mentioned eight times[17] in seven different places in the Qur'an: *Sūrah* al-A'rāf [7]: 136, Ṭāhā [20]: 39, 78, and 97; al-Qaṣaṣ [28]: 7 and 40; and al-Dhāriyāt [51]: 40.[18] In its usage, there are different opinions regarding the meaning of the word "*al-yamm*." Some consider it

[15] John A. Knauss, *Introduction to Physical Oceanography* (Illinois: Waveland Press, Inc, 2005), 1.
[16] Suhatril, *Pengantar Oseanografi* (Padang: Fakultas Pendidikan Ilmu Pengetahuan Sosial Institut Keguruan dan Ilmu Pendidikan Padang, 1996), 1-2.
[17] Muhammad Zaki, *Mu'jam Kalimat al-Qur'an al-Karim*, vol. II (2005), 30.
[18] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi*, 1.

synonymous with "*al-baḥr*" (sea or ocean),[19] while others interpret it as ocean waves. It is in its singular form and is never used in the dual (*muthannā*) or plural form (*jam'*). The word "*yamama*" is derived from the Syriac and was Arabized to express a region of saltwater (sea) or a very wide river (like an estuary).[20] All Qur'anic verses that mention "*al-yamm*" are related to the story of Moses and Pharaoh.

Although in Indonesian, this word is translated the same as "*al-baḥr*," which means 'sea' or 'ocean,' it appears that "*al-yamm*" is more accurately interpreted as a very wide river that closely resembles the sea.[21] Thus, the identification here is not based on its form but more on its nature, which is freshwater and salty.[22] This interpretation is based on the story of Moses' mother who placed her baby (Moses) in the river as a rescue effort from Pharaoh's attempt to kill him, as depicted in al-Qaṣaṣ [28]: 7 and Ṭāhā [20]: 38-39.

The term "*al-baḥr*" appears in 38 verses in the Qur'an. It is quite interesting that this word is presented in three forms: singular (*mufrad*), dual (*muthannā*), and plural (*jam'*). In the dual form, "*al-baḥrayn*," for example, it is mentioned in al-Furqān [25]: 53, al-Kahf [18]: 60, al-Naml [27]: 61, and al-Raḥmān [55]: 19, while in the plural form, *abḥur*, it is found in Luqmān [31]: 27. The word

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[19] Muḥammad b. Ḥasan al-Ṣayigh, *al-Lumḥāt fi Sharḥ al-Mulḥāt* (Arab Saudi: al-Mamlakah al-'Arabīyah al-Su'ūdīyah, 2004); Ibrāhīm Muṣṭafā et al., *al-Mu'jam al-Wasīṭ*, vol. 2 (Iskandariyah: Dār al-Da'wah, n.d.), 1066. Muḥammad al-Ḥusaynī, *Tāj al-'Urus min Jawāhir al-Qāmus*, vol. 17 (Beirut: Dār al-Fikr, 1414), 776. Abū Manṣūr, *Tahdhīb al-Lughah*, vol. 15 (Beirut: Dār Iḥyā' al-Turāth al-'Arabī, 2001), 460. Perhaps it is more appropriate to consider them as synonyms because both of these words, according to the principles of interpretation, are known as "*al-Alfāẓ al-latī yuẓannu bihā al-tarāduf wa laysat minh*" (words that are presumed to be the same but differ).

[20] Ibn Mandhūr, *Lisān al-'Arab*, vol. 6 (Beirut: Dār Ṣādir, 1414), 4966.

[21] As can be seen in al-Ṭabarī's explanation, although he also identifies "*al-yamm*" with "*al-baḥr*," in his further explanation, he states that "*al-yamm*" refers to the Nile River. Perhaps for this reason, the Qur'an chose to use "*al-yamm*" rather than "*al-baḥr*" in the case of Prophet Moses. Abū Ja'far al-Ṭabarī, *Jāmi' al-Bayān fī Ta'wīl al-Qur'ān*, vol. 18 (Beirut: Muassasat al-Risālah, 2000), 157.

[22] Ḥasan 'Izz al-Dīn b. Ḥusayn b. 'Abd al-Fattāḥ, *Mu'jam wa Tafsīr al-Lughawī li Kalimāt al-Qur'ān*, vol. 5 (Mesir: al-Hay'at al-'Āmmah al-Miṣrīyah li Kitāb, 2003), 309.

"*al-baḥr*" is generally used to refer to a large collection of saltwater or slightly freshwater. It is called so (from the root *b-ḥ-r*) because of its vastness and depth, and sometimes its salinity level decreases, approaching a freshwater characteristic.[23]

The vast ocean or sea, which is a part of our lives on this planet, is an extremely extensive region, exceeding the area of the landmasses. The seawater covers more than 70% of the Earth's surface. The average depth of the ocean is approximately 3,800 meters, significantly different from the average elevation of the land, which is only 840 meters. The living space available in the ocean is 300 times greater than that on land and in the air.[24]

The Beginning of the Ocean

The ocean is an essential part of the Earth, and the existence of the ocean is closely related to the Earth's formation process. Earth itself is estimated to have existed for about 4.5 billion years. This calculation is based on the age measured for the oldest rocks and the oldest crystals on Earth, indicating that Earth is at least 4.3 billion years old but does not reveal the exact age of Earth's formation. The best estimate for Earth's age, namely 4.54 billion years, is based on lead isotopic ratios, particularly the lead in troilite from iron meteorites, such as the Canyon Diablo meteorite.[25]

In the beginning, Earth was still unified with the heavens, with no separation between the sky and the Earth, which suggests that there was no rain or water coming down from the sky to the Earth. Then, several facts supported by science and technology emerged, including the evidence of an explosion that separated the sky and the Earth, the expansion of the universe, and the balance of temperature and the distribution of elements on the surface of the universe. This major explosion is known as the Big Bang

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[23] Fattāḥ, *Mu'jam wa Tafsīr al-Lughawī*, vol. 1, 154.

[24] Andi Iqbal Burhanuddin and H. M. Natsir Nessa, *Pengantar Ilmu Kelautan dan Perikanan* (Yogyakarta: Deepublish, 2018), 1.

[25] G. B. Dalrymple, "The Age of the Earth in the Twentieth Century: A Problem (mostly) Solved," *Geological Society Special Publication*, Vol. 190, No. 1 (2001), 205-221; "Geologic Time: Age of the Earth," https://pubs.usgs.gov/gip/geotime/age.html (accessed on December 9, 2021). Lawrence Badash, "The Age-of-the-Earth Debate," *Scientific American*, Vol. 261 (August, 1989), 90-96.

theory,[26] and it is marked as the beginning of the birth of space and time, including matter.[27] The Big Bang, or the separation between the sky and the Earth, is described in the Qur'an in Surah al-Anbiyā' [21]: 30, which reads: "Do the disbelievers not realize that the heavens and earth were one mass then We split them apart? And We created from water every living thing. Will they not then believe?"

In that verse, the God emphasizes that the heavens and the Earth were once united and not separated. Then the God separated them, allowing rain to fall from the sky to the Earth. From this rainwater, the God created something that is alive.[28] However, until now, the origin of water on Earth remains a question and is a significant subject of debate among scientists. Specifically, the presence of water is considered crucial for the origin and evolution of life. There are two fundamental questions about the origin of oceans on Earth: When were the oceans formed, and where did the water come from?

According to geological evidence that dates the age of the oceans, seawater has been present for at least 3.8 billion years.[29] Radioisotope dating of sediment indicates that the oldest age for sediment is 3.8 billion years, found in phosphate sediments in Greenland. This age serves as a reference for reconstructing the processes leading to the formation of the oceans. In broad terms, there are at least three theories regarding the origin of the Earth's oceans: rocky planetesimals containing water, such as carbonaceous chondrites (CC); icy planetesimals, such as comets; and the solar nebula. If planetesimals containing water contributed to the formation of Earth, the release of water vapor from planetesimals due to collisions would have formed a water vapor atmosphere, which later condensed into the oceans after cooling. In simpler

[26] Mersi Hendra, "Konsep Penciptaan Bumi dalam al-Qur'an (Studi Terhadap Qs. Al-Anbiya' [21]: 30) Menurut Hamka dalam Tafsir al-Azhar," *Jurnal Tafsere*, Vol. 9, No. 1 (2021), 108-137.

[27] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi*, 21.

[28] Siti Musarofah, "Ketersediaan Air bagi Kehidupan: Studi terhadap Asal-Usul dan Hilangnya Air di Bumi Perspektif al-Qur'an dan Sains," *Ngabari: Jurnal Studi Islam dan Sosial*, Vol. 14, No. 1 (2021), 61-76.

[29] Hidenori Genda and Masahiro Ikoma, "Origin of the Ocean on the Earth: Early Evolution of Water D/H in a Hydrogen-rich Atmosphere," *Icarus*, Vo. 194, No. 1 (2008), 42-52.

terms, first, water separated from rocks as a gas phase separated from a solid phase during the solidification process. Second, during the accretion process of Earth's formation from outer space materials, water and other gaseous materials were later incorporated into the core mass, which is Earth, and occupied the outer part of the formed planet. Third, water arrived later along with comets, asteroids, and other celestial bodies from outer space after Earth had already formed.[30]

Water descending from the heavens (Arabic: *al-samā'*, meaning all that is above humans, near or far) with a certain measure has been described in the Qur'an in al-Mu'minūn [23]:18, "we send down rain from the sky in perfect measure, causing it to soak into the earth. And We are surely able to take it away."

The presence of water on Earth is one of the wonders. Various processes on the Earth's surface, including life processes, occur with the involvement of water.[31] The origin of water, which is the essence of living creatures, is still not definitively known. The prevailing opinions are ultimately speculative in nature. In contrast, the origin of the formation of the oceans, as explained above, can be estimated by scientists despite differing opinions about its exact beginning.

As for the formation of the ocean itself, there are several theories, including the contraction theory. This theory was first proposed by Descartes (1596-1650) and later received support from James (1874) and Elie de Baumant (1852). The theory suggests that the Earth gradually contracted and wrinkled due to cooling processes, leading to the formation of surface features such as mountains, valleys, and plains.[32]

Another theory is the gravitational theory, which involves the gravitational attraction between the stars and the Earth. This prediction arises from the idea that the Earth was still hot and

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[30] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi*, 5.

[31] Lajnah Pentashihan Mushaf al-Qur'an, Badan Litbang dan Diklat Kemenag RI dengan Lembaga Ilmu Pengetahuan, *Air dalam Perspektif al-Qur'an dan Sains* (Jakarta: Lajnah Pentashihan Mushaf al-Qur'an, 2011), 7.

[32] Widya Prarikeslan, "Oseanografi," https://books.google.co.id/books?hl=en&lr=&id=C-VNDwAAQBAJ&oi=fnd&pg=PA1&dq=Ilmu+Oseanografi+sendiri+mulai+berkembang+&ots=6DXxTnKfht&sig=_mcHBgOSNN4X26RT2uDX67XHDc&redir_esc=y#v=onepage&q=Ilmu_Oseanografi_sendiri_mulai_berkembang&f=true (accessed on December 11, 2021).

molten, causing parts of the Earth's surface to be pulled into outer space. The remnants of this process formed ocean basins, with the Pacific Ocean basin being considered one according to this theory.

Furthermore, there is the continental drift theory, which was proposed by scientist Taylor in 1910 and later developed by Wegener (1912-1930). In the theory of continental drift, it is suggested that materials composed of Silicate-Aluminum (SI-AL) float on top of denser, plastic materials that form Silicate Magnesium (SI-MA) or the Earth's crust.[33] From the explanations of these theories, it can be seen that the formation of oceans can occur due to various factors, including the descent of rainwater filling low-lying areas, the shrinking of ocean basins due to cooling, gravitational processes, and the movement of floating continents.

Rainfall is one of the mechanisms that support the existence of life on Earth. In al-Naḥl [16]: 65, it is explained that rainwater is one of the factors that sustains life on Earth. "And the God sends down rain from the sky, giving life to the earth after its death. Surely in this is a sign for those who listen."

The expression "*ba'd mawtihā*" (after its deaeth) in the above verse can be understood in two conditions. First, the condition of the land being dry and barren due to a drought, making it unable to support the growth of plants that require water. Second, it refers to the periodization of Earth's events, where at that time, the Earth was still very hot, and then rain fell, gradually cooling the Earth. As a result, various plants emerged, prepared for human life.[34]

The Benefits of the Ocean for Life in the Qur'an

The ocean provides incredible benefits for life on Earth, and the following verses explain how the ocean was created by God for the benefit of creatures on Earth, especially humans. Even the origin of life on Earth is closely tied to the role of water, although there is still no accurate information about the exact

[33] Zainal Effendi Burlian, "Ilmu Alamiah Dasar, Ilmu Budaya Dasar, dan Ilmu Sosial Dasar," https://books.google.co.id/books?hl=en&lr=&id=tYjxDwAAQBAJ&oi=fnd&pg=PR5&dq=teori+gerak+apung+benua+&ots=7YzMRzRV9o&sig=qHB74FHvJDF-IvXQyacrCq3ZQu8&redir_esc=y#v=onepage&q&f=true (accessed on December 11, 2021).

[34] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi*, 8.

beginning of water on Earth. Information about the origin of life on Earth can be found in the Qur'an, al-Anbiyā' [21]: 30, which states, "And We made from water every living thing."[35]

The primary role of the ocean is as the main reservoir of water. The presence of water in other places on Earth is due to the circulation of water on the Earth's surface, known as the water cycle. Water is always present on Earth because it undergoes a cycle. A cycle is a system where the current state (phase) can repeat at some point in the future.[36] It can also be understood as changes that occur repeatedly in a specific pattern. So, the water cycle is the recurring changes that happen to water in a specific pattern. The Qur'an vividly describes the water cycle in detail and in an easily understandable manner in the following verse: "Do they not see how We drive rain to parched land, producing crops from which they and their cattle eat? Will they not then see?"

The ocean is considered the starting point and the end of the water cycle. The water on the Earth's surface undergoes evaporation, transforming into water vapor. The evaporation of water occurs when it is exposed to the heat of the sun. The water vapor rises to higher and colder places. As a result, the water vapor condenses to form water droplets. These countless water droplets form clouds. In very high and cold places, the water droplets can freeze. If the ice or frozen droplets in the clouds are large enough, they can fall to the ground as rain. Usually, the ice droplets transform back into water upon contact with the warmer air below.[37] The rainwater replenishes the Earth's surface in the form

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[35] The term "*al-mā'*" refers to the humidity or moisture in the air. Therefore, this verse indicates a scientific fact, which is that where there is humidity or moisture in the air, there is life. The implication is that where there is no humidity or moisture in the air, there is no life. See Muḥammad al-Ṭāhir b. 'Āshūr, *al-Taḥrīr wa al-Tanwīr*, vol. 17 (Tunis: al-Maktabah al-Ṭūnisīyah, n.d.), 56.

[36] Kamus Besar Bahasa Indonesia (KBBI) Online, "daur" (cycle), https://kbbi.web.id/daur (accessed on December 13, 2021).

[37] Some verses indicate that water comes from above (the sky). However, there are other verses that suggest that water comes from the earth (Fuṣṣilat [41]: 9-10). So, it can be explained that water originates from the earth (namely, the sea). Seawater is made salty to preserve things that are prone to spoilage. Then, the process of evaporation occurs, the water is collected in clouds, and then it descends to the earth through the process of rain. This means that through the process of evaporation, water not only falls as rain but, more than that, seawater, which is originally salty, can turn into fresh water. This is among the

of rivers, seas, and more. From here, the water cycle repeats the stages it has gone through. This continues, ensuring the Earth never dries up.[38] In addition to serving as a means of distributing water from the ocean to the land, the water cycle balances the surface temperature of the Earth between the ocean surface and the land surface.[39]

The water cycle, as explained above, also influences the climate. The Qur'an (al-Baqarah [2]: 164-174) describes the water cycle as a system that benefits all creatures on Earth.

> Indeed, in the creation of the heavens and the earth; the alternation of the day and the night; the ships that sail the sea for the benefit of humanity; the rain sent down by God from the skies, reviving the earth after its death; the scattering of all kinds of creatures throughout; the shifting of the winds; and the clouds drifting between the heavens and the earth—(in all of this) are surely signs for people of understanding.

The Qur'an from the Ministry of Religious Affairs provides an illustration of the alternation of night and day due to the rotation of the Earth, which causes global air movement in the form of winds. With the wind, ships can sail using their sails. It is also the wind that carries water vapor from the oceans, forming clouds and pushing them towards the land until they precipitate as rain. Through this rain, various types of plants grow, which in turn sustain various kinds of animals. Thus, the verse above explains the relationship between the sea, the water cycle, and life on land. Through the process of the water cycle, water is present on the Earth's surface, supporting life on the planet.

Geological evidence shows that life originated in the sea. For example, through certain processes, various particles from the sea, such as amino acids, melted together, which is the initial process of

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blessings of God. Muḥammad Mutawallī al-Sya'rāwī, *Tafsir al-Sya'rāwī*, vol. 16 (Mesir: al-Akhbār al-Yawm, 1997), 9989.

[38] Agustina Rampo, "Meningkatkan Hasil Belajar IPA Konsep Daur Air dan Peristiwa Alam Melalui Model Pembelajaran Talking Stick pada Murid Kelas IV SDN 130 Tokesan Kabupaten Tana' Toraja," *Jurnal Pemikiran dan Pengembangan Pembelajaran*, Vol. 1, No. 3 (2019), 105-116.

[39] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi*, 26.

the formation of the rocks that make up the Earth.[40] Terrestrial life began when the rocks had weathered sufficiently for soil to form on the surface, allowing plants to grow.

In addition to being the source and origin of life on Earth, the ocean also serves as a climate regulator. Without the role of the ocean, much of the planet would be too cold for human habitation because the ocean plays a crucial role in controlling the world's climate by redistributing heat from the equatorial regions to the poles. "And when the seas are set on fire" (al-Takwīr [81]: 6).

Regarding the term "*sujjirat*" (are set on fire) there are several interpretations: The sea dries up, so there is no humidity in the air; It means "*fujjirat*," which implies separation. Among several seas, there are separations (*barzakh*) between them, preventing them from mixing, as hinted in God's verse (al-Raḥmān [55]: 19-20); Heated, meaning that there is hot magma within the sea.[41]

From a scientific perspective, the verse can be understood as the sea being heated, thus acting as a balance for the Earth, which might otherwise be too cold for human habitation. According to NASA's Exoplanet Exploration, a habitable zone is a region where planets are not too hot, not too cold, have oxygen, solid ground, moderate levels of radioactivity, and are at a distance from their star that allows water to exist in liquid form.[42]

Furthermore, besides being the source of life and a global climate regulator, the ocean also serves as a livelihood for humans. Besides being the largest water reservoir on Earth, the ocean is a rich source of natural resources. It houses various marine life forms. The God says "And He is the One Who has subjected the sea, so from it you may eat tender seafood and extract ornaments to wear. And you see the ships ploughing their way through it, so

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[40] Erick Nugraha and Mugi Mulyono, "Laut Sumber Kehidupan," https://books.google. co.id/books?hl=en&lr=&id=LB15DwAAQBAJ&oi=fnd&pg=PA1&dq=manfaat+laut+bagi+kehidupan&ots=h2nbhoOAFP&sig=DSpYHHLbB5IRWGn_T-csCmLHwZ4&redir_esc=y#v=onepage&q=manfaat laut bagi kehidupan&f=true (accessed on December 15, 2021).

[41] Fakhr al-Dīn al-Rāzī, *al-Tafsīr al-Kabīr aw Mafātiḥ al-Ghayb*, vol. 31 (Beirut: Dār al-Kutub al-'Ilmīyah, 3rd Edition, 2000), 65.

[42] "Mengapa Tidak Semua Planet di Tata Surya Dapat Ditinggali Manusia?," https://www.kompas.com/skola/read/2021/03/17/172717069/mengapa-tidak-semua-planet-di-tata-surya-dapat-ditinggali-manusia (accessed on December 23, 2021).

you may seek His bounty and give thanks (to Him)" (al-Naḥl [16]: 14).

Various types of fish, as a source of protein needed by the human body, are abundantly available in the oceans. Even seaweed is always available and ready to be utilized by humans.[43] For example, Indonesia, which has a tropical climate, including tropical waters, is known for its rich variety of fish species. Based on research and various literature, it is known that Indonesia is home to not less than 3,000 species of fish. Out of these 3,000 species, around 2,700 species (90%) live in marine waters, and the remaining 300 species (10%) inhabit freshwater and brackish waters.[44] Furthermore, Indonesia's waters host approximately 85,707 km2 of coral reefs, which is around 14% of the world's total coral reef area, along with more than 700 species of macroalgae (seaweed), over 2,500 mollusk species, over 450 coral species, and over 1,400 echinoderm species. Based on these factors, Indonesia's seas are known as a marine mega diversity.[45]

The oceans contain numerous natural resources that can be harnessed by humans. Apart from being a source of daily food requirements, the sea can also be a source of livelihood, especially for fishermen. If all marine resources are managed wisely, they can even become profitable economic assets.[46] All of this is provided by God for the benefit of human life.

Initially, the sea benefited humans as a source of sustenance and a means of transportation. However, with technological and scientific advancements, humans have come to realize the crucial importance of the sea for life.[47] For instance, in terms of transportation, cities located near the sea have generally developed more rapidly than those located far from it. This is because these coastal cities are not only closer to the sea, a source of livelihood, but also serve as transportation hubs that facilitate trade.[48] The

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[43] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi*, 56.
[44] Abdul Samad Genisa, "Pengenalan Jenis-Jenis Ikan Laut Ekonomi Penting di Indonesia," *Oseana*, Vol. 24, No. 1 (1999), 17-38.
[45] Kementerian Kelautan dan Perikanan, "Petunjuk Teknis Pemetaan Sebaran Jenis Agen Hayati yang Dilindungi, Dilarang, dan Invasif di Indonesia" (2015), 1.
[46] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi.*
[47] Prarikeslan, "Oseanografi," 9.
[48] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi*, 58.

exploration and expeditions of the sea were even known 1000 years before Christ. Ancient Greek history, with its cultural remnants, indicates their knowledge of the sea, although it was based on mere hypotheses.[49]

In the Qur'an, the term "*taskhīr al-baḥr*" (al-Naḥl [16]: 14 and al-Jāthiyah [45]: 12), "*taskhīr al-anhār*" (Ibrāhīm [14]: 32), and "*taskhīr al-fulk*" (Ibrāhīm [14]: 32, al-Ḥajj [22]: 65) is used. These terms signify the act of making the ship and boat easily navigable in the sea or river as means of transportation.[50] The ability of sea water and river water to serve as transportation facilities is due to the nature of the fluid substance. There is a difference between solids and fluids. A fluid is a substance that is in a liquid or gaseous state.[51] Solids are considered materials that show limited deformation when subjected to shear forces. On the other hand, fluids exhibit phenomena as substances that continually change shape when subjected to shear pressure. In other words, fluids, including liquids, are substances that cannot withstand shear stress without undergoing deformation.[52] This characteristic is why ships can sail on the sea. From this, one can also understand the secret of why the Qur'an always uses the expression "subduing" when talking about the sea as a means of transportation. The soft and easily separable nature of sea water when in contact with solid objects, such as ships and boats made of wood or iron, is a special

[49] Suhatril, *Pengantar Oseanografi*, 3.

[50] The term "*sakhkhara-yusakhkhiru*" (which lexically means subduing or subjecting) indicates the decree of nature, namely the divine determinations of God that are compelling and apply to the natural world. In this context, the sea is "subjected" by God to fulfill the needs of humanity. Therefore, if the sea changes and, for example, punishes humanity with a tsunami, it does not mean that it has deviated from its divine decree, but rather it is executing God's command (as an executor) to punish humanity. This is what the Qur'an refers to as "*sunnat Allāh*" (the divine way or law of God). Indeed, you will not find Qur'anic verses that discuss the sea without also mentioning its benefits. Ahmad Husnul Hakim, *Sunnatullah versus Takdir: Menyingkap Kerancuan Makna Sunnatullah dan Takdir dalam Konteks Bencana Alam* (Depok: Lingkar Studi al-Qur'an [eLSiQ], 2023).

[51] Ainul Ghurri, *Dasar-Dasar Mekanika Fluida* (Bali: Universitas Udayana, 2014), 1.

[52] Ridwan, *Mekanika Fluida Dasar* (Jakarta Pusat: Gunadarma, n.d.), 1.

characteristic of liquid substances in general. This characteristic is part of God's divine decree or *Sunnat Allāh*.[53]

The Theological Implications of the Verses about the Oceans

The Qur'anic discussions about the vast seas themselves not only serve to make humans aware of their function and usefulness but often use the phenomenon of the sea to make humans aware of their limitations as servants. Therefore, they are willing to glorify God, the Creator. Thus, the verses that speak about the sea also speak about theology. This is in line with Ibn 'Arabī's statement that humans were created because of God's desire to show His existence to His creatures. This means that all the phenomena of the creation of the sea that are depicted in the Qur'an are part of the expression of the existence and greatness of God to humans.[54]

Out of a total of 38 verses that talk about the sea, around 18 of them also discuss the concept of *tawḥīd* (monotheism). For example, when Pharaoh was near death and said, "I believe that there is no deity except the one in whom the Children of Israel believe" (Yūnus [10]: 90), "It is God who created the heavens and the earth" (Ibrāhīm [14]: 32), "He is the one who subjected the sea" (al-Naḥl [16]: 14), "It is your Lord who drives the ship for you through the sea" (al-Isrā' [17]: 66), "If the sea were ink for writing the words of my Lord, the sea would be exhausted before the words of my Lord were exhausted" (al-Kahf [18]: 109), "Do you not see that God has subjected to you whatever is on the earth and the ships which run through the sea by His command?" (al-Ḥajj [22]: 65), "Do you not see that the ships sail through the sea by the favor of God that He may show you of His signs?" (Luqmān [31]: 31), "And of His signs is that He shows you the lightning [causing] fear and aspiration, and He sends down from the sky rain and gives life thereby to the earth after its lifelessness" (al-Rūm [30]: 24).

Thus, the interpretation of the concept of Tawhid in the phenomenon of the creation of the sea is so important so that humans do not stop at the admiration of the extraordinary sea or

[53] Lajnah Pentashihan Mushaf al-Qur'an, *Tafsir Ilmi*, 69.

[54] Muḥy al-Dīn b. 'Arabī, *The Bezels of Wisdom* (New York: Paulist Press, 1980), 50.

perhaps the admiration of science and technology. Ultimately, this admiration should be directed to humans who are so remarkable in uncovering and discovering the secrets of nature, so that the highest form stops at material or humans[55] (homocentric)[56] and cannot see the God as the Creator behind it all.

Furthermore, the use of the term "*sakhkhara*" (subjected) strengthens the theological dimension behind the journey of the universe, including the ocean. In this regard, the God says, "And He has subjected whatever is in the heavens and whatever is on the earth—all from Him. Indeed, in that are signs for a people who give thought" (al-Jāthiyah [45]: 13). This shows how the universe, including the sea, cannot deviate from its destiny, which is to fulfill the needs of humans. If the ocean is not controlled or subjected (*taskhīr*) by God, it means they have a will like humans, and humans would have perished long ago. This is because they would not like and even want to punish humans if they saw them being disobedient to God. However, humans are very weak when they have to face all of God's creations that are so great, such as the heavens, the earth, mountains, the sun, including the sea when they "misbehave." As great and strong as humans may be, they will never be able to subdue the natural world if the God does not intervene.

In a ḥadīth Qudsī, it is stated:

> There is no day when the sun rises except that the heavens say, 'O Lord, allow me to pour upon the son of Adam.' They enjoyed Your goodness, but did not thank You for it. The same happens with the sea and the mountains; they cry out to God with the same call as the heavens, 'O Lord, allow me to drown those who do not thank Your blessings.' Then God replies, 'Leave them, leave them. If you were their creator, you would have shown them mercy. They are My servants. If they repent, I will be their Beloved; and if they do not repent, I am their doctor.[57]

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[55] Material abundance or humans becoming one of the predictions of future life forms will leave behind the gods that previously existed in human history. Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow* (United Kingdom: Random House, 2016).

[56] Toshihiko Izutsu, *Relasi Tuhan dan Manusia: Pendekatan Semantik terhadap al-Qur'an* (Yogyakarta: Tiara Wacana Yogya, 1997), 78.

[57] This ḥadīth Qudsī is narrated by Aḥmad b. Ḥanbāl and quoted by al-Sha'rāwī. See al-Sha'rāwī, *Tafsīr al-Sha'rāwī*, 66.

This demonstrates the theological dimension of the sea's role in creation and how it emphasizes the concept of Tawhid in the Qur'anic verses related to the sea.

Conclusion

The Qur'an contains various pieces of information about oceanography, and what is truly remarkable is that the Qur'an, revealed 14 centuries ago when technology was extremely limited, and even information about the oceans was scarce, provides abundant information about the seas. Moreover, all the verses of the Qur'an were revealed far from the sea, yet they contain extensive information about the oceans. Some of this information was only discovered centuries later. To this day, no scientific research contradicts the Qur'an.

The Qur'an provides a wealth of information about the oceans, including their origins, which later became a source of life on land. Life on land can thrive because of rainfall that moistens the earth, allowing for life to flourish. The Qur'an also informs us about the role of the oceans in regulating the global climate, the water cycle, and the vast natural resources found in the seas. Various marine animals serve as a source of protein. Furthermore, the Qur'an explains how the oceans were subdued so that humanity could sail upon them, making the oceans a major mode of transportation. To this day, the largest and heaviest transportation vessels in the world are found on the oceans.

While many of the Qur'anic verses have been corroborated by science, their fundamental purpose is to emphasize the concept of monotheism (*tawḥīd*) rather than merely expressing the marvels of the natural world. The Qur'an carries a mission of teaching a theocentric view, not a homocentric one. It conveys an implicit message that scientific progress will only lead to material fulfillment or objects if it does not include religion. Ultimately, the concept of monotheism found in the verses about the oceans in the Qur'an encompasses: a) Worshiping God as the one and only God, b) Recognizing God in every event or occurrence, c) Perceiving God in every creation (creature).

This study underscores the need for continued interdisciplinary research, bringing together experts in oceanography, theology, and

other relevant fields to explore the multifaceted insights provided by the Qur'an. Further investigation into the Qur'anic verses concerning the oceans can yield a deeper understanding of the relationship between science, faith, and the natural world. Additionally, educators and religious scholars should collaborate to incorporate these Qur'anic teachings into educational curricula, fostering a holistic perspective that integrates scientific knowledge with spiritual and ethical values.

Furthermore, because this research primarily focused on the oceans in the Qur'an with a theological analysis, further research on other verses related to nature should be expanded. This includes topics such as water, air, plants, animals, and so forth, in order to present a holistic theological message from the verses of the natural world.

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