

# Agricultural Crisis Mitigation Strategy through Scientific Interpretation: A Study on Tafsir Ilmi by the Indonesian Ministry of Religious Affairs

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<b>Keywords:</b> Scientific interpretation, agricultural verses, environmental crisis.	<b>Abstract</b> This research examines the scientific interpretation of agricultural verses in the Ministry of Religion's interpretation. The Ministry of Religion's scientific interpretation work responds to efforts to integrate science and the Qur'an. It is motivated by modern social life characterized by advances in science and technology. Scientific interpretation is used in interpreting <i>kauniyah</i> verses by involving scientific tools. The meaning revealed results from a dialectical process between the Qur'an and scientific disciplines or modern science. This qualitative-descriptive research seeks to trace and classify the interpretation of agricultural verses in the Ministry of Religion's scientific interpretation works. The findings show that the Ministry of Religion's scientific interpretation of agricultural verses includes several aspects, such as the nature of human creation as managers of the earth, livelihoods, land use, use of plants for human life, water resources, and preventing water crises. The Ministry of Religion's scientific interpretation of these agricultural verses responds to contemporary environmental crises and global warming phenomena. This interpretation also provides insight into ecological preservation by farming as a provider of life in the universe. Such environmental preservation can mitigate global crises caused by rapid industrial and technological life.
<b>Kata Kunci:</b> Tafsir ilmi, ayat pertanian, krisis lingkungan.	<b>Abstrak</b> Penelitian ini bertujuan untuk mengkaji penafsiran ayat-ayat pertanian dalam tafsir ilmi Kemenag. Karya Tafsir ilmi Kemenag disusun sebagai respon atas upaya pemaduan antara sains dan Al-Qur'an. Hal ini dilatarbelakangi oleh kehidupan sosial modern yang ditandai dengan kemajuan ilmu pengetahuan dan teknologi. Tafsir ilmi sejatinya digunakan dalam penafsiran ayat-ayat kauniyah dengan melibatkan perangkat-perangkat ilmiah. Makna yang diungkap merupakan hasil proses dialektika antara Al-Qur'an dan disiplin ilmu pengetahuan atau sains modern. Penelitian kualitatif-deskriptif ini berupaya menelusuri dan mengklasifikasi penafsiran ayat-ayat pertanian dalam karya tafsir ilmi Kemenag. Temuan menunjukkan bahwa penafsiran saintifik Kemenag terhadap ayat-ayat agrikultur meliputi beberapa aspek seperti hakikat penciptaan manusia sebagai pengelola bumi, penghidupan dan pemanfaatan lahan, pemanfaatan tumbuhan bagi kehidupan manusia, sumber daya air dan pencegahan krisis air. Secara konklutif, tafsir ilmi kemenag terhadap ayat-ayat pertanian ini merespon fenomena kontemporer tentang adanya krisis lingkungan dan pemanasan global. Penafsiran ini juga memberikan wawasan pelestarian lingkungan dengan cara bercocok tanam sebagai penyeimbang kehidupan alam semesta. Pelestarian lingkungan demikian menjadi mitigasi atas krisis-krisis global yang ditimbulkan oleh kehidupan industri dan teknologi yang pesat.
<b>Article History</b> :	Received : 2024-08-03      Accepted : 2024-12-14      Published: 2024-12-27
<b>MLA Citation Format</b> :	Fajariyah, Lukman, and Mowafg Abraham Masuwd. "Agricultural Crisis Mitigation Strategy through Scientific Interpretation: A Study on Tafsir Ilmi by the Indonesian Ministry of Religious Affairs." QOF: Jurnal Studi al-Qur'an dan Tafsir, vol. 8, no. 2, 2024, pp. 239-56, <a href="https://doi.org/10.30762/qof.v8i2.2522">https://doi.org/10.30762/qof.v8i2.2522</a> .
<b>APA Citation Format</b> :	Fajariyah, L., & Masuwd, M. A. (2024). Agricultural Crisis Mitigation Strategy through Scientific Interpretation: A Study on Tafsir Ilmi by the Indonesian Ministry of Religious Affairs. QOF: Jurnal Studi al-Qur'an dan Tafsir, 8(2), 239-256. <a href="https://doi.org/10.30762/qof.v8i2.2522">https://doi.org/10.30762/qof.v8i2.2522</a>

## Introduction

Indonesia is one of the world's agrarian-tropical countries, with vast expanses of agricultural land, a highly valued natural resource.<sup>1</sup> These natural resources are a source of wealth for a country because managing this sector can provide prosperity and welfare for its people. Management of agricultural lands as valuable natural resources must be carried out with a particular strategy and knowledge. This strategy is essential so that the implementation of land and plant processing benefits farmers and even the country. It is intended to preserve natural resources and avoid failure or agricultural crises.

The agrarian crisis is not only seen from the aspect of natural resources but also needs to be seen from the aspect of human resources. Abundant natural resource lands are only meaningful if the potential of human resources can keep up with their management. This phenomenon is a concern for the sustainability of national life in the future. It was noted that when Indonesia experienced a crisis of young farmer regeneration, as reported by CNBC Indonesia, the demographics of farmers were dominated by the 40-60-year age group. Meanwhile, the 20-30 year age group experienced a significant decline.<sup>2</sup> Upland Project, an organization that focuses on agriculture, said that the decline of young farmers was caused by their need for more awareness of agricultural potential.<sup>3</sup> On the other hand, the need for more knowledge about agriculture is increasingly closing off the younger generation's interest.

This problem needs to be explicitly highlighted to restore the stability of agricultural human resources, especially the instillation of knowledge about the importance of agriculture in national and state life. Agriculture and youth are two solid pillars in developing an independent national civilization.<sup>4</sup> Therefore, mitigating this crisis is the right step to minimize the possibilities that are not optimal in the agricultural sector. In addition, awareness of the farm crisis is an initial step to achieving the prosperity of the Indonesian nation, which is often echoed in the Javanese adage "*gemah ripah loh jinawi*" (prosperous society and fertile land).

Studies and research on agricultural and environmental crisis mitigation have tended to be historical, climatological, sociological, and anthropological. Previous researchers

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<sup>1</sup> Andreas B. Rahutomo et al., "Tinjauan Kebijakan Penyediaan Kawasan Hutan untuk Pembangunan Food Estate," *JBKL: Jurnal Bisnis Kehutanan dan Lingkungan* 1, no. 1 (2023): 30, <https://doi.org/10.61511/jbkl.v1i1.2023.256>.

<sup>2</sup> Andy Fernanda Probotrianto, "Mengatasi Krisis Regenerasi di Sektor Pertanian Indonesia," CNBC Indonesia, 2023, <https://www.cnbcindonesia.com/opini/20230704141012-14-451144/mengatasi-krisis-regenerasi-di-sektor-pertanian-indonesia>.

<sup>3</sup> "Indonesia Krisis Petani Milenial," Upland Project, 2023, <https://upland.psp.pertanian.go.id/artikel/1687919247/indonesia-krisis-petani-milenial>.

<sup>4</sup> Veranus Sidharta et al., "Suatu Kajian: Pembangunan Pertanian Indonesia," *Kajian Ilmu Sosial Fakultas Ilmu Sosial dan Ilmu Politik Universitas Muhammadiyah Jakarta* 2, no. 2 (2021): 235, <https://doi.org/10.24853/kais.2.2.229-232>.

include Laboguerrero,<sup>5</sup> Aryal,<sup>6</sup> Malhi,<sup>7</sup> Panchasara,<sup>8</sup> and Sadewa.<sup>9</sup> Some researchers studied agricultural discourse using anthropological, climatological, and scientific approaches. Their findings produced practical concepts regarding human adaptation to agriculture.

In line with this information, agricultural discussions and studies will be more comprehensive if analyzed with other perspectives, such as scientific interpretation. This interpretation is intended to explore the response to the Qur'an and its understanding of current issues. The Qur'an has the spirit of *ṣāliḥ li kulli zamān wa makān* (the Qur'an is always by all conditions and times).<sup>10</sup> This spirit reflects that the Qur'an is genuinely accommodating to all human problems. Therefore, the Quran and its interpretation are not forgotten in the issues of human life; they will continue to be dialectic with dynamic social conditions. As a result, they truly become a guideline for life and are followed in life.

Based on the above phenomenon, this study will discuss mitigating the agricultural crisis through scientific interpretation (tafsir ilmi) by the Ministry of Religious Affairs of the Republic of Indonesia (Kemenag RI). The previous Kemenag scientific interpretation research was discussed in particular by academics and researchers such as Rifki Yunanda, who studied fauna in Kemenag scientific interpretation,<sup>11</sup> Hamdan and Miski, who researched Bees in the Kemenag scientific interpretation based on audiovisuals,<sup>12</sup> and Nur Azzuhro examines the meaning of *dharrah* in the Kemenag scientific interpretation.<sup>13</sup> Mapping of several previous studies shows that research on agricultural crisis mitigation in the scientific interpretation of the Indonesian Ministry of Religious Affairs has never been studied. This kind of research is essential to contribute knowledge about agriculture through the perspective of the scientific interpretation of the Qur'an published by the Ministry of Religious Affairs. Specifically, this study will explore thematic interpretations of agriculture

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<sup>5</sup> Ana Maria Loboguerrero et al., "Food and Earth Systems: Priorities for Climate Change Adaptation and Mitigation for Agriculture and Food Systems," *Sustainability (Switzerland)* 11, no. 5 (2019), <https://doi.org/10.3390/su11051372>.

<sup>6</sup> Jeetendra Prakash Aryal et al., "Climate Change Mitigation Options among Farmers in South Asia," *Environment, Development and Sustainability* 22, no. 4 (2020): 3267–89, <https://doi.org/10.1007/s10668-019-00345-0>.

<sup>7</sup> Gurdeep Singh Malhi, Manpreet Kaur, and Prashant Kaushik, "Impact of Climate Change on Agriculture and Its Mitigation Strategies: A Review," *Sustainability* 13, no. 3 (January 27, 2021): 1318, <https://doi.org/10.3390/su13031318>.

<sup>8</sup> Heena Panchasara, Nahidul Hoque Samrat, and Nahina Islam, "Greenhouse Gas Emissions Trends and Mitigation Measures in Australian Agriculture Sector—A Review," *Agriculture* 11, no. 2 (January 20, 2021): 85, <https://doi.org/10.3390/agriculture11020085>.

<sup>9</sup> Dzikiara Pesona Sadewa, Dudy Heryadi, and Taufik Hidayat, "Pengaruh Keterlibatan Food and Agriculture Organization (FAO) dalam Upaya Peningkatan Produktivitas Pertanian Pasca-Konflik Krisis Pangan Etnis Rohingya di Myanmar," *Insignia: Journal of International Relations* 7, no. 1 (April 7, 2020): 57, <https://doi.org/10.20884/1.ins.2020.7.1.2243>.

<sup>10</sup> Ajeng Indira Dewi, "Constellation and Vernacularization of Javanese Texture of The Qur'an: Characteristic and Cultural Locality of Javanese Pondok Pesantren in Tafsir Al-Ibriz Li Ma'rifah Tafsir Al-Qur'an Al-Aziz," *Mushaf: Jurnal Tafsir Berwawasan Keindonesiaan* 3, no. 2 (June 30, 2023): 47, <https://doi.org/10.33650/mushaf.v3i2.4786>.

<sup>11</sup> Rifki Yunanda, "Fauna dalam Perspektif Al-Qur'an (Studi Tafsir Ilmi Kemenag LIPI)" (Universitas Islam Negeri Raden Intan Lampung, 2018).

<sup>12</sup> Ali Hamdan and Miski Miski, "Dimensi Sosial dalam Wacana Tafsir Audiovisual: Studi Atas Tafsir Ilmi, 'Lebah Menurut al-Qur'an dan Sains,' Lajnah Pentashihan Mushaf al-Qur'an Kemenag RI Di Youtube," *RELIGIA* 22, no. 2 (October 23, 2019): 248, <https://doi.org/10.28918/religia.v22i2.2190>.

<sup>13</sup> Nur Metta Chumairoh Azzuhro, "Makna Zarah Dalam Al-Qur'an dan Tafsirnya dan Tafsir Ilmi Kemenag RI," *Academic Journal of Islamic Principles and Philosophy* 2, no. 1 (June 23, 2021): 111–36, <https://doi.org/10.22515/ajipp.v2i1.3367>.

verses in the Indonesian Ministry of Religious Affairs scientific interpretation. The Tafsir Ilmi Kemenag is interesting to study because it is a serious effort carried out by Quran scholars collaborating with scientists. This combination is ideal for producing an understanding of verses that are revelations through the reality of life that is observable.<sup>14</sup> Therefore, Quran scholars and scientists can fulfill human knowledge regarding the rational understanding of revelations related to natural phenomena (especially agriculture).

This library research uses qualitative-descriptive methods to describe the data comprehensively and in-depth. The primary data sources are scientific interpretation works published by the Indonesian Ministry of Religion, including *Penciptaan Bumi dalam Perspektif Al-Qur'an dan Sains*, *Tafsir Ilmi Tumbuhan dalam Perspektif Al-Qur'an dan Sains*, and *Tafsir Ilmi Air dalam Perspektif Al-Qur'an dan Sains*. Secondary data sources are book literature, books, scientific articles, and others relevant to this research. The data collection technique was carried out by tracing or identifying the interpretation of agricultural verses in the Kemenag scientific interpretation. This study was limited to a discussion of the scientific interpretation of agricultural verses in the scientific interpretation of the Indonesian Ministry of Religion. The collected data were classified and described clearly and in-depth. Then, data interpretation was carried out on the scientific interpretation of agricultural verses, and the relevant meanings of agricultural activities were analyzed. Finally, conclusions were drawn from the entire discussion of the study.

### **The Paradigm of Scientific Interpretation and its Dynamics in the Interpretation of the Qur'an**

The development of interpretation of the Quran in the modern era is increasingly dynamic, and various patterns and approaches also color the dynamics of interpretation. Modern life marked by the development of science is a new challenge for the Qur'an in responding to contemporary issues. The spirit of the Qur'an, which is always by every condition and time, opens up space to always be studied and understood with various methods. One method of revealing the meaning of the contents of the Qur'an is the scientific interpretation method. On several occasions, this method has been considered effective in showing the contents of the Quran through scientific interpretation and the development of sciences in the modern era.

Etymologically, tafsir ilmi consists of two words: *tafsir* means explanation, and *ilmi* means knowledge or scientific nature.<sup>15</sup> Meanwhile, scientific interpretation can be understood as efforts to interpret the Qur'an using a scientific perspective. Muhammad Husein Adz-Adzahabī defines, as quoted by Putri Maydi Arofaturun, that scientific interpretation is the activity of interpreting the Qur'an through scientific theory devices from various scientific disciplines, accompanied by philosophical explanations related to the verses being interpreted.<sup>16</sup> Meanwhile, according to Fahd Abdhul Rahman, *tafsir ilmi* is the

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<sup>14</sup> Lajnah Pentashihan Mushaf Al-Qur'an, Badan Litbang & Diklat Kementerian Agama RI, and Lembaga Ilmu Pengetahuan Indonesia (LIPI), *Penciptaan Bumi dalam Perspektif Al-Qur'an dan Sains* (Jakarta: Lajnah Pentashihan Mushaf Al-Qur'an, 2010), xv.

<sup>15</sup> Nisfu Kurniyatillah, Mahmud Arif, and Mohamad Syawaluddin, "Eksistensi Asbabun Nuzul dan Tafsir Ilmi dalam Al-Qur'an," *An-Nur: Jurnal Studi Islam* 15, no. 1 (2023): 108, <https://doi.org/10.37252/annur.v15i1.438>.

<sup>16</sup> Putri Maydi Arofaturun Anhar, Imron Sadewo, and M. Khoirul Hadi Al-Asy'ari, "Tafsir Ilmi: Studi Metode Penafsiran Berbasis Ilmu Pengetahuan pada Tafsir Kemenag," in *Prosiding Konferensi Integrasi Interkoneksi Islam dan Sains* (Yogyakarta: UIN Sunan Kalijaga, 2018), 110.

ijtihad of a mufassir in revealing the meaning of *kauniyah*<sup>17</sup> verses through scientific views so that the miracles of the great Qur'an can be seen.<sup>18</sup>

Scientific interpretation is used to uncover the *kauniyah* verses (concerning the universe and its contents), which are interpreted using scientific tools. The meaning revealed results from a dialectic process between the Qur'an and the discipline of modern science. In addition, there is a reciprocal relationship between the two, namely between science, which emphasizes the content of the *kauniyah* verses, and the verses of the Qur'an, which affirm scientific discoveries in everyday life from certain aspects.

The attempt to interpret with scientific methods requires standard interpretation requirements, including mastery in several disciplines, including the rules of Arabic language (syntax and morphology), the science of *balaghah* or rhetoric (*ma'ani*, *bayan*, and *badi'*), the science of ushul fiqh (*'amm*, *khaṣṣ*, *mujmāl*, and *mufaṣṣal*) and *'ulumul Qur'ān*.<sup>19</sup> An interpreter also needs broad scientific knowledge in the context of scientific interpretation so that the interpretation has comprehensive value.

Since its emergence, scientific interpretation has caused debate (pros and cons) among thinkers and experts in interpretation. First, the group pro the scientific interpretation method assumes that the Qur'an is not only a holy book but includes all guidance in human life, including the dynamics of life in the universe. In line with this, al-Ghazālī in *Ihya' Ulumiddin* argued that the Qur'an contains explanations of the essence of Allah, His attributes, and deeds. At the same time, knowledge is included in the three categories. According to him, several verses of the Qur'an describe phenomena of the universe, such as the rotation of the sun, moon, and stars, and even the existence of fauna and flora.<sup>20</sup> Therefore, scientific interpretation has a vital role in interpreting the Qur'an.

Fakhruddin al-Razī was one of the interpreters who applied this method with his tafsir book *Tafsīr al-Kabīr Mafātiḥ al-Ghayb*. In it, al-Razi interpreted the Qur'an using a scientific or knowledge perspective accompanied by philosophical views.<sup>21</sup> Other figures who responded positively and used a scientific approach in analyzing the Qur'an include Abū Ḥāmid al-Ghazālī, Az-Zamakhsharī, Jalaluddīn as-Suyūṭī, Ibnu Abi Faḍl al-Mursī, Ṭantawī Jauharī, and Badruddīn al-Zarkashī.<sup>22</sup>

Meanwhile, the opposing group argues that the Qur'an's description of science and the universe is nothing more than *'ibrah'*, wisdom and teaching about His greatness in creating the universe. Therefore, scientific interpretation does not need to be formalized to interpret the Qur'an. The Qur'an has permanent miracles, while science is always dynamic

<sup>17</sup> Kauniyah verses describe the creation of the universe, including all creations in it. Kauniyah refers to anything in the universe that can be felt through the five human senses. See, Mudzakir and Muhammad Arifin, "Paragraph of Kauniyah Verse Creation of The Universe (Study of The Science Interpretation of The Qur'an)," *Al-Fatih: Jurnal Studi Islam* 11, no. 1 (2023): 20.

<sup>18</sup> Kurniyatillah, Arif, and Syawaluddin, "Eksistensi Asbabun Nuzul dan Tafsir Ilmi dalam Al-Qur'an," 109.

<sup>19</sup> Nur Afiyah and Eko Zulfikar, "Kualifikasi Intelektual dan Moral Mufasir pada Abad Kontemporer," *Al-Misykah: Jurnal Studi Al-Qur'an dan Tafsir* 3, no. 1 (January 1, 2022): 9, <https://doi.org/10.19109/almisykah.v3i1.13004>.

<sup>20</sup> Azzuhro, "Makna Zarah dalam Al-Qur'an dan Tafsirnya dan Tafsir Ilmi Kemenag RI," 117.

<sup>21</sup> Ishmatul Karimah Syam et al., "Kajian Historis Tafsir Falsafi," *Hanifiya: Jurnal Studi Agama-Agama* 6, no. 1 (2023): 90, <https://doi.org/10.15575/hanifiya.v6i1.18321>.

<sup>22</sup> Muhammad Patri Arifin, "Applied Science dalam Wacana Tafsir Ilmi," *Al-Munir: Jurnal Ilmu Al-Qur'an dan Tafsir* 5, no. 1 (2023): 9, <https://doi.org/10.24239/al-munir.v5i1.279>.

and changes depending on circumstances, time, and its reviewers.<sup>23</sup> On the other hand, the scientific interpretation of the Quran contains several errors and weaknesses, such as theological and logical fragility. The theological fragility in question is that the Qur'an was revealed as a guide to life behavior such as morals, muamalah, aqidah, and law, and on the other hand, it is not a book of science. The content of scientific signs in the Qur'an is only as a guide, not a new theory. Then, logical weakness identifies that science does not have an eternal nature and is relative, so it seems inappropriate to interpret the eternal Qur'an with something that is not eternal.<sup>24</sup> Several scholars and interpretation experts are in this position, including Maḥmud Shakīr, Ash-Shaṭībī, Bintu Shati', Maḥmud Shaltut, and Amin Al-Khulli.<sup>25</sup>

### **The Scientific Interpretation of the Ministry of Religion and Religious Authorities**

It is challenging for the two parties to agree on the pros and cons of scientific interpretation as a discourse on interpreting the Qur'an. The debate on scientific understanding from the Middle Ages to the Modern Era has not reached a point of agreement.<sup>26</sup> Even so, the scientific interpretation product published by the LPMQ Institute of the Indonesian Ministry of Religion has its reasons and is even more critical. This cannot be separated from the context of the development of the era and technology that is increasingly advanced and sophisticated. Muchlis Hanafi stated, as quoted by Ali Hamdan and Miski that the reasons behind the existence of the Kemenag scientific interpretation product are the demands of a dynamic era, the development of science, and the massiveness of sophisticated technology. Based on the phenomenon of increasingly advanced human civilization, scientific interpretation is projected to respond and explicitly show the existence of a constellation of science and Islam (interpretation of the Qur'an).<sup>27</sup> In this way, scientific interpretation (tafsir ilmi) of the contents of the Qur'an is assumed to be able to contribute knowledge to modern life.

In addition, the Kemenag scientific interpretation work is produced from collaborative work between the LPMQ Institute, the Research and Development and Training Agency of the Ministry of Religion of the Republic of Indonesia, and the Indonesian Institute of Sciences (LIPI). From 2010 to 2022, LPMQ has published several thematic scientific interpretation works. Initially, LPMQ, which was founded in 1957, focused on the task of validating the Al-Qur'an. However, along with its development, the role and duties of LPMQ have become broader in scope. The existence of LPMQ is an ad hoc committee and is part of the Center for Research and Development of Religious Lectures. LPMQ is very responsible for the study and maintenance of the Al-Qur'an. On this basis, LPMQ has several

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<sup>23</sup> Sulaiman, "Tafsir Ilmi dalam Perspektif Al-Qur'an," *Jurnal Ilmu Al-Qur'an dan Tafsir* 2, no. 2 (2019): 9, <https://doi.org/10.35132/albayan.v2i2.76>.

<sup>24</sup> Azzuhro, "Makna Zarrah dalam Al-Qur'an dan Tafsirnya dan Tafsir Ilmi Kemenag RI," 118.

<sup>25</sup> Rizki Firmansyah et al., "Urgensi Tafsir Ilmi di Masa Modern: Tanggapan Zaghulul An-Najjar Pada Kritikus Tafsir Ilmi di dalam Kitabnya Tafsir Ayat-Ayat Kauniyah fi Al-Quranil Karim," *Reslaj: Religion Education Social Laa Roiba Journal* 5, no. 6 (2023): 3639.

<sup>26</sup> Isyifina Nailatuz Zulfa, "Epistemologi Penafsiran Ayat Lebah dalam Tafsir Ilmi Kementerian Agama RI" (UIN Walisongo Semarang, 2020), 4.

<sup>27</sup> Hamdan and Miski, "Dimensi Sosial dalam Wacana Tafsir Audiovisual: Studi Atas Tafsir Ilmi, 'Lebah Menurut al-Qur'an dan Sains,' Lajnah Pentashihan Mushaf al-Qur'an Kemenag RI Di Youtube," 258.

tasks and functions, namely the field of authenticity, the field of research and publication of the Al-Qur'an, and the field of management of the Bayt Al-Qur'an and documentation.

The scientific interpretation conducted by LPMQ is its main effort in carrying out its duties and functions as an institution for studying the Qur'an. Abdul Djamil refers to this effort as a medium for improving the quality of understanding and practice of the Qur'an. According to him, the Qur'an, which introduces itself as *hudan*, is a whole of scientific signs that show the greatness of Allah. He even calculated that the verses of the Qur'an containing scientific signs are approximately 750 to 1000 verses. Meanwhile, the verses of law only range from 200 to 250 verses. Thus, the argument is based on research by Zaglul An-Najjar.<sup>28</sup>

LPMQ, as a state institution, certainly has high authority in conducting studies of the Qur'an and especially in producing scientific interpretations. In addition, rational-legal authority gives LPMQ the authority to carry out its duties and functions as a legitimate and legal institution.<sup>29</sup> Although scientific interpretation is still a matter of debate among experts, under the authority of LPMQ, the public readily accepts the discourse of scientific interpretation. This is because LPMQ is a credible institution, and the projection of scientific interpretation is carried out by involving experts in their fields. This means that scientific interpretation provides a comprehensive understanding of the verses of kauniah and can even be considered very close to the intention of the interpreted Qur'an.

According to Muhammad Shohib, the involvement of experts in the Ministry of Religious Affairs' scientific interpretation project is intended to reap comprehensive meaning and understanding of the contents of the Qur'an. Therefore, the experts referred to in this scientific interpretation must meet several specific criteria; First, an interpreter must be proficient in the linguistic rules of the Qur'an and the rules of interpretation, such as *munāsabatul ayat*, *asbābun nuzūl*, narrations in interpretation and other Islamic sciences. Second, an interpreter (*ilmī*) is required to master scientific matters like chemistry, biology, astronomy, physics, etc. From here, it can be classified into two important groups in scientific interpretation: the first is the Sharia team group, and the second is the Kauni team group. Both must synergize in collective *ijtihad* to interpret and explain the kauniah verses of the Qur'an.<sup>30</sup>

### Humans as Caliphs and Managers of the Earth

Humans were created as caliphs or managers of the earth in a broad context. The term manager refers to the ability to process, organize, develop, repair, control, take care of, and so on. The purpose of humans as managers and empowerers of the earth refers to the QS. al-Baqarah: 30.<sup>31</sup> This means that every human must carry out significant duties and responsibilities as long as he lives in the world. The verse also implies that, apart from

<sup>28</sup> Lajnah Pentashihan Mushaf Al-Qur'an, Badan Litbang & Diklat Kementerian Agama RI, and Lembaga Ilmu Pengetahuan Indonesia (LIPI), *Tafsir Ilmi Tumbuhan dalam Perspektif Al-Qur'an dan Sains*, 1st ed. (Jakarta: Lajnah Pentashihan Mushaf Al-Qur'an, 2011), ix.

<sup>29</sup> Anis Maisya and Nur Rohman, "Pentashihan Al-Qur'an Digital di Indonesia: Peran, Legitimasi dan Otoritas LPMQ," *Academic Journal of Islamic Principles and Philosophy* 2, no. 1 (June 17, 2021): 38, <https://doi.org/10.22515/ajipp.v2i1.3725>.

<sup>30</sup> Lajnah Pentashihan Mushaf Al-Qur'an, Badan Litbang & Diklat Kementerian Agama RI, and Lembaga Ilmu Pengetahuan Indonesia (LIPI), *Tafsir Ilmi Air Dalam Perspektif Al-Qur'an Dan Sains*, Satu (Jakarta: Lajnah Pentashihan Mushaf Al-Qur'an, 2011), xii.

<sup>31</sup> Kustiana Arisanti, "Proses Pendidikan Nabi Adam Perspektif Al-Qur'an," *Jurnal Pendidikan Islam Indonesia* 4, no. 2 (April 7, 2020): 125, <https://doi.org/10.35316/jpii.v4i2.195>.

worship (as mentioned in the Adh-Dhāriyāt (51):56), humans' responsibilities also include the duty and mission of taking care of the earth.

Since its creation, humans have been given authority to manage the earth as a great trust. This awareness needs to be instilled so that humans live in knowing in what context they live and are created. According to Jusmaliani, two basic human awarenesses must be known: awareness as '*abdullāh* (servant of Allah) and awareness as *khalifatullāh* (representative of Allah on earth).<sup>32</sup> These two awarenesses are like two sides of a coin united in humans throughout life's journey. As mentioned in al-Baqarah (2): 30, conferring the title of caliph on humans is a mandate and an important task that must be carried out.

The term *caliph* has several meanings, including 'representative'. This means that humans were created to be Allah's representatives on earth. Because humans are Allah's representatives on earth, they must care for all of His creations. Even to support human duties on earth, Allah has bestowed the earth's and the universe's potential to be used and utilized by humans as a gift and mercy.<sup>33</sup> It is as intended in the QS. al-Jasiyah:13.

The duties and responsibilities of humans are very many and broad, starting from those related to themselves to other humans and even to the universe. About the duties of humans as managers of the earth, they are expected to be able to care for all kinds of diverse existences on earth. Suppose humans know all the potentials other creatures do not have, such as spirit, soul, reason, and conscience.<sup>34</sup> In that case, they will use these potentials to fulfill their duties and responsibilities satisfactorily. However, the title of the caliph is often misinterpreted, and even the authority given by Allah to humans is manipulated in such a way for their interests, regardless of whether the method is suitable or not. Such manipulative actions are undoubtedly contrary to the nature of Allah's gift and violate His verses. This firmness is explained clearly in QS. Ibrāhīm (14): 32-33.

The word *sakhhara* in QS. Ibrāhīm (14): 32-33 means 'subdue,' it is not uncommon for humans to misunderstand this term as legalizing their right to subdue all of God's creation on earth for their interests. If humans were more observant in understanding this verse, then in reality, the subject who subjugates is Allah. Therefore, humans must balance their rights and obligations towards God's creation on earth.<sup>35</sup>

The Qur'an provides a discussion space on environmental preservation as part of its recommendations for humans to manage the earth. It should also be realized that human occupation on earth has three goals: first, to serve God as a servant who is obliged to serve God; second, to represent God or khalifatullah on earth; and third, to create civilization on earth.

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<sup>32</sup> Jusmaliani, *Pengelolaan Sumber Daya Insani* (Jakarta: Bumi Aksara, 2011), 15.

<sup>33</sup> Lajnah Pentashihan Mushaf Al-Qur'an, RI, and (LIPPI), *Tafsir Ilmi Tumbuhan Dalam Perspektif Al-Qur'an Dan Sains*, 216.

<sup>34</sup> Rahmat Zubarkah Nasution and Gunawan Gunawan, "Konsep Manusia dan Problematikanya Dalam Al-Qur'an," *Edu-Riligia: Jurnal Ilmu Pendidikan Islam Dan Keagamaan* 5, no. 3 (October 16, 2022): 255, <https://doi.org/10.47006/ER.V5I3.12929>.

<sup>35</sup> Lajnah Pentashihan Mushaf Al-Qur'an, RI, and (LIPPI), *Tafsir Ilmi Tumbuhan dalam Perspektif Al-Qur'an dan Sains*, 219.



## Livelihood and Land Use

The land humans step on to live on is the mainland, a livelihood source. Land management and utilization reflect the interaction between humans and nature.<sup>36</sup> Land management activities are not just activities of gratitude for the natural potential God has bestowed upon humans. It is a cycle of the ongoing survival process, meaning that if these activities are not preserved in human life, there will be an imbalance and gap in life between humans and the universe. As mentioned above, as humans' main livelihood, it is inseparable from the nature of the creation of the earth as a land of livelihood for humans. The world, with its land, becomes a place for all kinds of plants that are useful for humans to grow. Allah confirms this in the Al-Hijr (15):19.

This verse describes every plant that grows on the earth's surface, including its type and size. Different soil cultures certainly cause this. However, this verse indirectly implies that humans conduct research on soil/land and plants as the basis for human life's needs on earth.<sup>37</sup> Besides, land is a medium of life for living things: a place for humans to do activities, plants or animals to live, and many more. Human components and land have a relationship in the ecosystem. Humans need land or soil, and land (although it seems passive) needs help and care from human hands. Humans can cultivate land with an agricultural system so that the land can provide food for humans.<sup>38</sup> Identification of soil conditions is essential to support the sustainability of agriculture.

The earth's land was not created just like that; it contains earth resources that support agricultural productivity. The leading earth resource is water; water is an essential aspect of the life of creatures on earth, whether humans, plants, or animals need it.<sup>39</sup> Every creature depends on water for its body's needs and even survival. As an earth resource, water never recedes and runs out, even though it is always sipped or used for other purposes. Water's role as a life source is described in the QS. al-Anbiyā' (21):30. This verse describes the infidels and polytheists who do not think about or pay attention to the natural phenomena that occur. In these phenomena, there is power and evidence of the greatness of Allah. This verse compares the phenomenon of the sky and the Earth, which Allah initially united and separated. The world is a place for humans and other living things to live. Scientists say that life on Earth begins with water. First, life starts with water, such as the sea. Second is water's role in the life of all living things, such as sperm fluid. Third, water is an essential element for the life of creatures. The bodies of living things contain water, even two-thirds of the human body.<sup>40</sup>

Living things like humans, animals, and even land or soil need water to live and grow plants. Dry, barren land will find it difficult to grow plants, so much land is included in a dead land. The dead land seems unable to benefit human life or animals and plants. It has become

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<sup>36</sup> Faujatul Hasanah et al., "Pemetaan Sebaran Tingkat Alih Fungsi Lahan Sawah di Kabupaten Serang," *Jurnal Agrica* 14, no. 2 (2021): 172, <https://doi.org/10.31289/agrica.v14i2.5039>.

<sup>37</sup> Yeli Sarvina, "Precision Agriculture; Konsep dan Pendekatannya dalam Al-Quran," in *Antologi Esai Membangun Kejayaan Pertanian Dengan Al-Qur'an*, ed. Miftahul Jannah and Choirun Nisa (Bogor: HIMMPAS IPB University, 2020), 100.

<sup>38</sup> Febri Hijroh Mukhlis, "Paradigma Ekologis dalam Tafsir Al-Qur'an: Kajian Tematik-Kontekstual," *QOF: Jurnal Studi Al-Qur'an dan Tafsir* 6, no. 1 (June 15, 2022): 94, <https://doi.org/10.30762/qof.v6i1.396>.

<sup>39</sup> Siti Musyafaroh, "Ketersediaan Air Bagi Kehidupan: Studi Terhadap Asal-Usul dan Hilangnya Air di Bumi Perspektif Al-Quran dan Sains," *Ngabari: Jurnal Studi Islam dan Sosial* 14, no. 1 (2021): 61.

<sup>40</sup> Lajnah Pentashihan Mushaf Al-Qur'an, RI, and Lembaga Ilmu Pengetahuan Indonesia (LIPI), *Penciptaan Bumi dalam Perspektif Al-Qur'an dan Sains*, 85.

the primary concern of humans, and it needs to be revived for farming. Again, the solution to the life of this land must be connected to the role of water. The QS. al-Nahl (16):65 explains water as a tool to restore this land. The earth in this verse can be understood as land because land is where humans live. Rivers on land are always located at the lowest part of the earth's surface, which is a gap between mountains and higher lands; the oceans are also separated from each other because of the existence of dividing lands such as islands, continents, and peninsulas. These parts of the earth occur by themselves and by the will of Allah.

Land separated from the ocean or river is like another part. Therefore, after rainwater falls to the earth, it becomes three parts. First, it evaporates again due to heating (evaporation). Second, it flows on the surface through river water or pools in lakes, ponds, rice fields, depressions in the land, and wet settlements. Third, it seeps into the ground.<sup>41</sup> Compared to its dry or barren state, the earth is increasingly recovering and fertile with these parts. Some of the earth's potential and the lands it covers provide excellent opportunities for humans to utilize the land by planting or farming. Farming is a reflection of noble work.<sup>42</sup> This activity has a broad impact and benefits for farmers, other people, animals, and living things around them. Therefore, humans are encouraged to make land a productive area. This recommendation is also mentioned in the following hadith;

*If you hear the news that the Dajjal will appear while you are planting crops in a valley, don't rush to clean it up because there is still life for humans after that.*

(Hadith narrated by Al-Bukhari)

This hadith explains that planting activities are essential to prolonging life. Life will not stop because of the coming of Dajjal because farming is still preserved among humans. This is a necessary recommendation for preserving nature and life: Always revive and utilize the land on earth by planting plants.

The recommendation to revive and utilize dead land is proof of Islam's concern for the preservation of the earth and the universe. Humans have a responsibility to make the land productive (*ihya'ul mawat*). According to Sayyidina Umar, this law was implemented when he served as caliph; It is based on the hadith of the Prophet;<sup>43</sup> *"whoever revives (utilizes) dead land (not owned by anyone else) becomes his"*. (narrated by al-Tirmidhi). According to the Hanafi and Syafi'i schools, dead land is land that is not under someone's ownership. Since there are no traces or signs that the land has been inhabited, it is permissible to own it by managing or reviving it.<sup>44</sup> Ways to revive dead land can be irrigating and planting plants. That way, the land will be sustainable and valuable for human life. The land is no longer an abandoned or dead area.

### **Utilization of Plants for and by Humans**

It is not without reason that the earth must be planted with various plants and vegetation; besides being a balancer of the universe, it is also a source of breathing for living

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<sup>41</sup> Lajnah Pentashihan Mushaf Al-Qur'an, RI, and Lembaga Ilmu Pengetahuan Indonesia (LIPI), 87.

<sup>42</sup> Mohd Asmadi Yakob and Muhammad Adam Abd Azid, "Prophetic Instructions In Agriculture: Petunjuk Nabawi dalam Bidang Pertanian," *Al-Qanatr: International Journal of Islamic Studies* 27, no. 2 (2022): 187.

<sup>43</sup> Lajnah Pentashihan Mushaf Al-Qur'an, RI, and (LIPI), *Tafsir Ilmi Tumbuhan dalam Perspektif Al-Qur'an dan Sains*, 184.

<sup>44</sup> Muhammad Irfan Djufri, "Ihya' Al-Mawat Perspektif Hanafiyah dan Syafi'iyah (Studi Komparatif)," *Sakina: Journal of Family Studies* 5, no. 1 (2021): 10.

things. Plants emit oxygen with which humans can breathe.<sup>45</sup> In addition, plants of all kinds can be helpful in several ways, such as consumption and treatment; plant/tree stems can be used as home interiors. Several times, the Qur'an mentions and explains the role of plants as staple foods and even medicines for humans. The plant creation process also occurred after the Earth was formed and the emergence of water in the Earth's contents. It implies that plants are an essential element in the components of life on Earth.

QS. al-Nāzi'at (79):30-31 explains that plants and water are described side by side as if they cannot be separated. This means that plants can only be found on land with sufficient water. These plants then become the primary material and basis for the occurrence of life on Earth.<sup>46</sup> QS. 'Abasa (80):24-32 emphasizes the role and benefits of plants for human life. QS. 'Abasa (80):24-32 informs that plants and vegetation were created on earth so humans could use them as a food source. Plants provide the elements needed for human and animal bodies' biological existence. Allah also created a taste for every plant product consumed.<sup>47</sup> QS. al-An'ām (6):141 explains the variety of fresh vegetables and fruits and their different tastes. The verse also informs humans about the food intake for humans created by Allah. Allah also wants humans to be able to utilize the land by farming. The farming results after the harvest should be partly given (*zakat*) to other people as a form of gratitude to Allah.<sup>48</sup>

In some of its contents, the Qur'an emphasizes why humans must plant and farm so that humans are valuable and exist on earth. Because farming provides physical and spiritual food, the benefits of agriculture are not only felt by oneself but can be helpful and even become alms for other people or creatures. It is as emphasized by the Prophet;

*From Jabir bin Abdullah ra, Rasulullah saw. said, "There is no Muslim who plants a garden, except that every plant that he eats is worth charity for him, what people steal from him is charity for him, what wild animals eat is charity for him, and no one takes from him except that it is charity for him."* (narrated by Muslim)

Humans have become the main actors in environmental and natural management through farming,<sup>49</sup> Plants produced from farming provide extensive benefits for living things (not to mention humans alone). Plants are the anchor of balancing life between the universe and humans. Indirectly, farming is the same as preserving life. In addition to its complex benefits, farming also positively affects physical and spiritual aspects.

### **The Role of Water and Water Crisis Prevention**

The role and benefits of water for life are enormous. Water is a source of life for creatures, including humans. The verses of the Qur'an explain a lot about water and its benefits, stating that life for humans, plants, and animals occurs because of the role of water. Water is a source of well-being in its various uses. The role of water is mentioned in the Qaf (50):9-11.

First, water stabilizes the Earth's temperature. Humans and other living things can inhabit the Earth because the planet is at a certain distance from the sun and has the right

<sup>45</sup> Syaiful Rizal, "Manfaat Alam dan Tumbuhan 'Sumber Belajar Anak' dalam Perspektif Islam," *Childhood Education: Jurnal Pendidikan Anak Usia Dini* 1, no. 2 (2020): 97, <https://doi.org/10.53515/CJI.2020.1.2.96-107>.

<sup>46</sup> Lajnah Pentashihan Mushaf Al-Qur'an, RI, and (LIPPI), *Tafsir Ilmi Tumbuhan dalam Perspektif Al-Qur'an dan Sains*, 18.

<sup>47</sup> Lajnah Pentashihan Mushaf Al-Qur'an, RI, and (LIPPI), 19.

<sup>48</sup> Lajnah Pentashihan Mushaf Al-Qur'an, RI, and (LIPPI), 19.

<sup>49</sup> Herman Khaeron, *Islam, Manusia dan Lingkungan Hidup* (Bandung: Nuansa Cendekia, 2023), 17.

size, resulting in surface temperatures that support water and life. However, there are some areas on Earth where life is rare or non-existent. The cold temperatures at the poles make it difficult for few creatures to survive, while the excessive heat and lack of water make life rare in the deserts. Without water, the Earth would be too hot to live on.<sup>50</sup> Imagine there was no water; during the day, humans would experience excessive heat due to exposure to solar radiation, and at night, humans would experience cold because the Earth barely radiates heat. In the human body, the thermal properties of water act as a temperature regulator for proteins and nucleic acids, which are highly dependent on ambient temperature for their structure and function. It shows that Allah created water with measurable characteristics that benefit the Earth and its life. About this, QS. al-Mu'minūn (23):18 states;

وَأَنْزَلْنَا مِنَ السَّمَاءِ مَاءً بِقَدَرٍ فَأَسْكَنْتَهُ فِي الْأَرْضِ ط وَأَنَا عَلَىٰ ذَهَابٍ بِهِ لَقْدِرُونَ<sup>ج</sup>

*And We have sent down rain from the sky in a measured amount and settled it in the earth. And indeed, We can take it away.*

The term “*biqadar*” describes the principle of balance. Therefore, the water that Allah created is adjusted to its exact size to meet the needs of all living things and maintain the stability of the temperature on Earth.<sup>51</sup>

Second, water is life support. The urgency of water resources in life is a certainty for all living things, especially humans. Water is essential and cannot be separated from human life and its environment.<sup>52</sup> The Qur'an explains water as a basic need in the dynamics of life on earth. It becomes a supporting sector for the continuation of life, as mentioned in the QS. al-Baqarah (2):164. The verse indicates that Allah created life from water, which can be interpreted as all living things coming from water. The message conveyed by the verse also implies that water is the source of life, both in terms of its availability and continuity. The current reality also shows that life can only continue in water, whether in animals, plants, microorganisms, or humans. It seems complicated to ignore this strong dependence on water, but the complete mechanism, especially regarding the origin of life on Earth, still needs to be fully understood.<sup>53</sup>

In addition to water's very complex role, there needs to be good awareness of its use. This aims to ensure that water is genuinely distributed sufficiently and not excessively to avoid a water crisis in the future. Water capacity is limited while the needs of humans or other living things continue to increase. On the other hand, a water crisis can also occur due to changes in the weather caused by global warming.<sup>54</sup> Global warming will result in higher evaporation rates and increasing precipitation, including rain and snow. This increase in

<sup>50</sup> Al-Qur'an, RI, and (LIPI), *Tafsir Ilmi Air dalam Perspektif Al-Qur'an dan Sains*, 62.

<sup>51</sup> Al-Qur'an, RI, and (LIPI), 64.

<sup>52</sup> Wahyudi Ikhsan, Wisnu Ardytia, and Irwan Kurniawan Soetijono, “Implementasi Kebijakan Pelestarian Lingkungan Hidup Melalui Konservasi Sumber Mata Air Di Gombengsari Kalipuro Banyuwangi,” *Populika* 9, no. 2 (December 22, 2021): 92, <https://doi.org/10.37631/populika.v9i2.811>.

<sup>53</sup> Al-Qur'an, RI, and (LIPI), *Tafsir Ilmi Air Dalam Perspektif Al-Qur'an dan Sains*, 65.

<sup>54</sup> Agnes Sri Mulyani, “Antisipasi Terjadinya Pemanasan Global dengan Deteksi Dini Suhu Permukaan Air Menggunakan Data Satelit,” *Jurnal Rekayasa Teknik Sipil dan Lingkungan-Centech* 2, no. 1 (2021): 23, <https://doi.org/10.33541/cen.v2i1.2807>.

evaporation is expected to vary regionally. Freshwater supplies worldwide are expected to increase, but droughts and floods will become more common in many locations and with greater intensity. In addition, increased surface runoff will not necessarily mean increased freshwater availability, as erosion is also expected to increase, clouding water and silting up rivers, streams, lakes, and reservoirs. Higher temperatures will also increase water solubility and can lead to eutrophication, which results in excessive algae growth or other aquatic organisms.<sup>55</sup>

High greenhouse gas emissions cause this global warming phenomenon due to the widespread use of fossil fuels since the Industrial Revolution.<sup>56</sup> Therefore, climate change is a consequence of human actions that damage the environment, as the QS. al-Rūm (30):41 states;

*Corruption has appeared throughout the land and sea by (reason of) what the hands of people have earned so He may let them taste part of (the consequence of) what they have done that perhaps they will return (to righteousness).*

The verse above explains that excessive and unwise human use of resources damages the face of the Earth or the environment. Humans are also responsible for the water crisis.<sup>57</sup> Therefore, using resources requires policies to avoid negative impacts on the sustainability of life on Earth. Several efforts must be made to prevent the water crisis.

Water resource management, changes in water consumption patterns, and new technologies for providing clean water can help overcome the water crisis.<sup>58</sup> However, to maximize efforts to prevent the water crisis, these efforts must be recognized and become an essential concern for society at the individual, group, and global levels. Although there is a natural process of renewing water resources on Earth through the hydrological cycle, humans are increasingly aware that water is a limited resource. Water crises have occurred in various parts of the world, not only in dry climates. Obtaining clean water is often difficult, even in places with sufficient water supplies.<sup>59</sup> Many rural and urban areas that used to have abundant water now face problems such as becoming slums with dirty, dark-colored puddles of water emitting an unpleasant odor. This condition is generally caused by improper exploitation of water and land resources, even beyond their capacity and suitability.<sup>60</sup> Exploiting resources violates their level, as mentioned in the QS. al-Ra'd (13):17.

In urban or industrial areas, water management includes regulating water sources and managing wastewater to ensure that dirty water or waste does not pollute clean water sources. The community must manage water resources collaboratively because of its broad

<sup>55</sup> Al-Qur'an, RI, and (LIPI), *Tafsir Ilmi Air Dalam Perspektif Al-Qur'an Dan Sains*, 119.

<sup>56</sup> Baktiar Leu, "Dampak Pemanasan Global Dan Upaya Pengendaliannya Melalui Pendidikan Lingkungan Hidup Dan Pendidikan Islam," *At-Tadbir: Jurnal Manajemen Pendidikan Islam* 5, no. 2 (2021): 1, <https://doi.org/10.51700/attadbir.v1i2.207>.

<sup>57</sup> Al-Qur'an, RI, and (LIPI), *Tafsir Ilmi Air dalam Perspektif Al-Qur'an dan Sains*, 120.

<sup>58</sup> Al-Qur'an, RI, and (LIPI), 121.

<sup>59</sup> Azyyati Ridha Alfian, *Krisis Air di Indonesia: Fenomena, Dampak & Solusi* (Sumatera Barat: Suluah Kato Khatulistiwa, 2023), 9.

<sup>60</sup> Al-Qur'an, RI, and (LIPI), *Tafsir Ilmi Air dalam Perspektif Al-Qur'an dan Sains*, 122.

scope and complex problems.<sup>61</sup> This effort may require government attention to create regulations related to water resources and even legal rules for exploitative actors. It aligns with the principles of policy and justice in the QS. Şad (38):26. The party that should be primarily responsible for running water and land management is the central government or local government by implementing regulations and sanctions that must be implemented wisely, fairly, and impartially.<sup>62</sup> Thus, water resource management is carried out seriously to maintain the balance of nature and avoid water crises and other disasters.

## Conclusion

Scientific interpretation has experienced massive development in the modern era. Modern life, marked by the rapid increase in science and technology, has become the motivation for the integration of the Qur'an and science. It cannot be separated from the spirit of the Qur'an, which is studied in every space and time. The Qur'an always accommodates all human life problems from various sectors. Apart from the debate about scientific interpretation, the projection of this scientific interpretation has developed to respond and explicitly show the integration of science and Islam (the Qur'an). It is also the background for LPMQ Kemenag to produce works of scientific interpretation. The scientific interpretation carried out by LPMQ is its main effort in realizing its duties and functions as an institution for studying the Qur'an. As a government institution that oversees the study of the Qur'an, LPMQ has high authority so that the community can accept the production of scientific interpretation.

Scientific interpretation of agricultural verses is one of the topics discussed in the work of the Ministry of Religion scientific interpretation. However, this topic is not packaged in one specific theme. Scientific understanding of agricultural verses is raised as a response to contemporary life, identical to environmental and agrarian crisis events. This is due to modern humans' need for more ecological preservation and cultivation awareness. Modern humans tend to pay attention to the intensity of technology and industry. Therefore, several essential things to understand include the nature of human creation as caliphs and managers of the earth. Humans as managers of the planet refer to a broad context; specifically, the world in question is the plains where humans live in the form of land. Land is the basis of human life and livelihood; by cultivating land, planting, and farming, humans can continue consuming and utilizing every crop. The reason is that plants produced from agriculture are not only beneficial in terms of physicality but also beneficial for human spirituality. Livelihood and land management are carried out through irrigation and fertilizing dry land. Water is a natural resource that is important for human life and nature. Good and wise use of water will have a good impact; on the other hand, excessive use that is not by the levels will cause a crisis or even a disaster for humans.

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<sup>61</sup> Al-Qur'an, RI, and (LIPi), 123.

<sup>62</sup> Al-Qur'an, RI, and (LIPi), 124.

## References

- Abidin, Ahmad Zainal, and Fahmi Muhammad. "Tafsir Ekologis dan Problematika Lingkungan (Studi Komparatif Penafsiran Mujiyono Abdillah dan Mudhofir Abdullah terhadap Ayat-Ayat Tentang Lingkungan)." *QOF: Jurnal Studi Al-Qur'an dan Tafsir* 4, no. 1 (June 15, 2020): 1–18. <https://doi.org/10.30762/qof.v4i1.1990>.
- Afiyah, Nur, and Eko Zulfikar. "Kualifikasi Intelektual dan Moral Mufasir pada Abad Kontemporer." *Al-Misykah: Jurnal Studi Al-Qur'an dan Tafsir* 3, no. 1 (January 1, 2022): 1–21. <https://doi.org/10.19109/almisykah.v3i1.13004>.
- Alfian, Azyyati Ridha. *Krisis Air di Indonesia: Fenomena, Dampak & Solusi*. Sumatera Barat: Suluh Kato Khatulistiwa, 2023.
- Al-Qur'an, Lajnah Pentashihan Mushaf, Badan Litbang & Diklat Kementerian Agama RI, and Lembaga Ilmu Pengetahuan Indonesia (LIPI). *Tafsir Ilmi Air dalam Perspektif Al-Qur'an dan Sains*. Satu. Jakarta: Lajnah Pentashihan Mushaf Al-Qur'an, 2011.
- Andy Fernanda Probotrianto. "Mengatasi Krisis Regenerasi di Sektor Pertanian Indonesia." CNBC Indonesia, 2023. <https://www.cnbcindonesia.com/opini/20230704141012-14-451144/mengatasi-krisis-regenerasi-di-sektor-pertanian-indonesia>.
- Anhar, Putri Maydi Arofatur, Imron Sadewo, and M. Khoirul Hadi Al-Asy Ari. "Tafsir Ilmi: Studi Metode Penafsiran Berbasis Ilmu Pengetahuan pada Tafsir Kemenag." In *Prosiding Konferensi Integrasi Interkoneksi Islam dan Sains*, 109–13. Yogyakarta: UIN Sunan Kalijaga Yogyakarta, 2018.
- Arifin, Muhammad Patri. "Applied Science dalam Wacana Tafsir Ilmi." *Al-Munir: Jurnal Ilmu Al-Qur'an dan Tafsir* 5, no. 1 (2023): 1–41. <https://doi.org/10.24239/al-munir.v5i1.279>.
- Arisanti, Kustiana. "Proses Pendidikan Nabi Adam Perspektif Al-Qur'an." *Jurnal Pendidikan Islam Indonesia* 4, no. 2 (April 7, 2020): 124–32. <https://doi.org/10.35316/jpii.v4i2.195>.
- Aryal, Jeetendra Prakash, Dil Bahadur Rahut, Tek B. Sapkota, Ritika Khurana, and Arun Khatri-Chhetri. "Climate Change Mitigation Options among Farmers in South Asia." *Environment, Development and Sustainability* 22, no. 4 (2020): 3267–89. <https://doi.org/10.1007/s10668-019-00345-0>.
- Azzuhro, Nur Metta Chumairoh. "Makna Zarrah dalam Al-Qur'an dan Tafsirnya dan Tafsir Ilmi Kemenag RI." *Academic Journal of Islamic Principles and Philosophy* 2, no. 1 (June 23, 2021): 111–36. <https://doi.org/10.22515/ajipp.v2i1.3367>.
- Dewi, Ajeng Indira. "Constellation and Vernacularization of Javanese Texture of The Qur'an: Characteristic and Cultural Locality of Javanese Pondok Pesantren in Tafsir Al-Ibriz Li Ma'rifah Tafsir Al-Qur'an Al-Aziz." *Mushaf: Jurnal Tafsir Berwawasan Keindonesiaan* 3, no. 2 (June 30, 2023): 48–70. <https://doi.org/10.33650/mushaf.v3i2.4786>.
- Firmansyah, Rizki, Efrita Norman, Moh. Romli, and Yudi Permana. "Urgensi Tafsir Ilmi Di Masa Modern: Tanggapan Zaghul An-Najjar pada Kritikus Tafsir Ilmi di dalam

- Kitabnya Tafsir Ayat-Ayat Kauniah fi Al-Quranil Karim." *Reslaj: Religion Education Social Laa Roiba Journal* 5, no. 6 (2023): 3632–48.
- Hamdan, Ali, and Miski Miski. "Dimensi Sosial dalam Wacana Tafsir Audiovisual: Studi Atas Tafsir Ilmi, 'Lebah Menurut al-Qur'an dan Sains,' Lajnah Pentashihan Mushaf al-Qur'an Kemenag RI di Youtube." *Religia* 22, no. 2 (October 23, 2019): 248. <https://doi.org/10.28918/religia.v22i2.2190>.
- Hasanah, Faujatul, Iwan Setiawan, Trisna Insan Noor, and Eka Purna Yudha. "Pemetaan Sebaran Tingkat Alih Fungsi Lahan Sawah di Kabupaten Serang." *Jurnal Agrica* 14, no. 2 (2021): 171–82. <https://doi.org/10.31289/agrica.v14i2.5039>.
- Herman Khaeron. *Islam, Manusia dan Lingkungan Hidup*. Bandung: Nuansa Cendekia, 2023.
- Jusmaliani. *Pengelolaan Sumber Daya Insani*. Jakarta: Bumi Aksara, 2011.
- Kurniyatillah, Nisfu, Mahmud Arif, and Mohamad Syawaluddin. "Eksistensi Asbabun Nuzul dan Tafsir Ilmi dalam Al-Qur'an." *An-Nur: Jurnal Studi Islam* 15, no. 1 (2023): 100–113. <https://doi.org/10.37252/annur.v15i1.438>.
- Lajnah Pentashihan Mushaf Al-Qur'an, Badan Litbang & Diklat Kementerian Agama RI, and Lembaga Ilmu Pengetahuan Indonesia (LIPI). *Penciptaan Bumi Dalam Perspektif Al-Qur'an dan Sains*. Jakarta: Lajnah Pentashihan Mushaf Al-Qur'an, 2010.
- Lajnah Pentashihan Mushaf Al-Qur'an, Badan Litbang & Diklat Kementerian Agama RI, and Lembaga Ilmu Pengetahuan Indonesia (LIPI). *Tafsir Ilmi Tumbuhan Dalam Perspektif Al-Qur'an dan Sains*. 1st ed. Jakarta: Lajnah Pentashihan Mushaf Al-Qur'an, 2011.
- Leu, Baktiar. "Dampak Pemanasan Global dan Upaya Pengendaliannya Melalui Pendidikan Lingkungan Hidup dan Pendidikan Islam." *At-Tadbir: Jurnal Manajemen Pendidikan Islam* 5, no. 2 (2021): 1–15. <https://doi.org/10.51700/attadbir.v1i2.207>.
- Loboguerrero, Ana Maria, Bruce M. Campbell, Peter J.M. Cooper, James W. Hansen, Todd Rosenstock, and Eva Wollenberg. "Food and Earth Systems: Priorities for Climate Change Adaptation and Mitigation for Agriculture and Food Systems." *Sustainability (Switzerland)* 11, no. 5 (2019). <https://doi.org/10.3390/su11051372>.
- Maisya, Anis, and Nur Rohman. "Pentashihan Al-Qur'an Digital di Indonesia: Peran, Legitimasi dan Otoritas LPMQ." *Academic Journal of Islamic Principles and Philosophy* 2, no. 1 (June 17, 2021): 25–42. <https://doi.org/10.22515/ajipp.v2i1.3725>.
- Malhi, Gurdeep Singh, Manpreet Kaur, and Prashant Kaushik. "Impact of Climate Change on Agriculture and Its Mitigation Strategies: A Review." *Sustainability* 13, no. 3 (January 27, 2021): 1318. <https://doi.org/10.3390/su13031318>.
- Mudzakir, and Muhammad Arifin. "Paragraph of Kauniah Verse Creation of The Universe (Study of The Science Interpretation of The Qur'an)." *Al-Fatih: Jurnal Studi Islam* 11, no. 1 (2023): 18–33.
- Muhammad Irfan Djufri. "Ihya' Al-Mawat Perspektif Hanafiyah dan Syafi'iyah (Studi Komparatif)." *Sakina: Journal of Family Studies* 5, no. 1 (2021): 1–15.



- Mukhlis, Febri Hijroh. "Paradigma Ekologis dalam Tafsir Al-Qur'an: Kajian Tematik-Kontekstual." *QOF: Jurnal Studi Al-Qur'an dan Tafsir* 6, no. 1 (June 15, 2022): 89–108. <https://doi.org/10.30762/qof.v6i1.396>.
- Mulyani, Agnes Sri. "Antisipasi Terjadinya Pemanasan Global dengan Deteksi Dini Suhu Permukaan Air Menggunakan Data Satelit." *Jurnal Rekayasa Teknik Sipil dan Lingkungan-Centech* 2, no. 1 (2021): 22–29. <https://doi.org/10.33541/cen.v2i1.2807>.
- Musyafaroh, Siti. "Ketersediaan Air Bagi Kehidupan: Studi Terhadap Asal-Usul dan Hilangnya Air di Bumi Perspektif Al-Quran dan Sains." *Ngabari: Jurnal Studi Islam dan Sosial* 14, no. 1 (2021): 61–76.
- Nasution, Rahmat Zubarkah, and Gunawan Gunawan. "Konsep Manusia dan Problematikanya dalam Al-Qur'an." *Edu-Riligia: Jurnal Ilmu Pendidikan Islam dan Keagamaan* 5, no. 3 (October 16, 2022): 249–57. <https://doi.org/10.47006/ER.V5I3.12929>.
- Panchasara, Heena, Nahidul Hoque Samrat, and Nahina Islam. "Greenhouse Gas Emissions Trends and Mitigation Measures in Australian Agriculture Sector—A Review." *Agriculture* 11, no. 2 (January 20, 2021): 85. <https://doi.org/10.3390/agriculture11020085>.
- Rahutomo, Andreas B., M. Iqbal Alexander, Miranda Yustika, and Rizaldy Yudhista Nurzirwa. "Tinjauan Kebijakan Penyediaan Kawasan Hutan untuk Pembangunan Food Estate." *JBKL: Jurnal Bisnis Kehutanan dan Lingkungan* 1, no. 1 (2023): 30–54. <https://doi.org/10.61511/jbkl.v1i1.2023.256>.
- Rizal, Syaiful. "Manfaat Alam dan Tumbuhan 'Sumber Belajar Anak' dalam Perspektif Islam." *Childhood Education: Jurnal Pendidikan Anak Usia Dini* 1, no. 2 (2020): 96–107. <https://doi.org/10.53515/CJI.2020.1.2.96-107>.
- Sadewa, Dzikiara Pesona, Dudy Heryadi, and Taufik Hidayat. "Pengaruh Keterlibatan Food and Agriculture Organization (FAO) dalam Upaya Peningkatan Produktivitas Pertanian Pasca-Konflik Krisis Pangan Etnis Rohingya Di Myanmar." *Insignia: Journal of International Relations* 7, no. 1 (April 7, 2020): 57. <https://doi.org/10.20884/1.ins.2020.7.1.2243>.
- Sarvina, Yeli. "Precision Agriculture; Konsep dan Pendekatannya dalam Al-Quran." In *Antologi Esai Membangun Kejayaan Pertanian dengan Al-Qur'an*, edited by Miftahul Jannah and Choirun Nisa, 98–104. Bogor: HIMMPAS IPB University, 2020.
- Sidharta, Veranus, ResmanMuharul Tambunan, Azwar, and Alifiah Ghaniyyu. "Suatu Kajian: Pembangunan Pertanian Indonesia." *Kajian Ilmu Sosial Fakultas Ilmu Sosial Dan Ilmu Politik Universitas Muhammadiyah Jakarta* 2, no. 2 (2021): 229–35. <https://doi.org/10.24853/kais.2.2.229-232>.
- Sulaiman. "Tafsir Ilmi dalam Perspektif Al-Qur'an." *Jurnal Ilmu Al-Qur'an dan Tafsir* 2, no. 2 (2019): 1–12. <https://doi.org/10.35132/albayan.v2i2.76>.

- Syam, Ishmatul Karimah, Suryana Alfathah, Eni Zulaiha, and Khader Ahmad. "Kajian Historis Tafsir Falsafi." *Hanifiya: Jurnal Studi Agama-Agama* 6, no. 1 (2023): 85–92. <https://doi.org/10.15575/hanifiya.v6i1.18321>.
- Upland Project. "Indonesia Krisis Petani Milenial," 2023. <https://upland.psp.pertanian.go.id/artikel/1687919247/indonesia-krisis-petani-milenial>.
- Wahyudi Ikhsan, Wisnu Ardytia, and Irwan Kurniawan Soetijono. "Implementasi Kebijakan Pelestarian Lingkungan Hidup Melalui Konservasi Sumber Mata Air di Gombengsari Kalipuro Banyuwangi." *Populika* 9, no. 2 (December 22, 2021): 86–93. <https://doi.org/10.37631/populika.v9i2.811>.
- Yakob, Mohd Asmadi, and Muhammad Adam Abd Azid. "Prophetic Instructions In Agriculture: Petunjuk Nabawi dalam Bidang Pertanian." *Al-Qanatir: International Journal of Islamic Studies* 27, no. 2 (2022): 185–93.
- Yunanda, Rifki. "Fauna dalam Perspektif Al-Qur'an (Studi Tafsir Ilmi Kemenag LIPI)." UIN Raden Intan Lampung, 2018.
- Zulfa, Isyфина Nailatuz. "Epistemologi Penafsiran Ayat Lebah dalam Tafsir Ilmi Kementerian Agama RI." UIN Walisongo Semarang, 2020.