

TAWĀZUN AS RELIGIOUS APPROACH IN POST-MINING LAND MANAGEMENT

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TAWĀZUN AS RELIGIOUS APPROACH IN POST-MINING LAND MANAGEMENT

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Abstract: This study aims to examine the environmental impact of mining activities from the Islamic perspective. The issue of concern in this article is the ex-mining pits that are not reclaimed nor being rehabilitated in post-mining activities. From the standpoint of *al-tawāzun al-bi'i*, good mining practices mean returning land and water's function to their original position with improved quality to maintain a balance in environmental management and minimize the resulting damage, including those that cost people's lives. For this purpose, the religious approach and values play a central role in spreading good awareness among Indonesian people, known as a religious society.

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[Penelitian ini bertujuan untuk mengetahui dampak lingkungan dari kegiatan pertambangan, melalui perspektif perspektif Islam. Isu yang menjadi perhatian dalam artikel ini adalah lubang bekas tambang yang tidak direklamasi maupun difungsikan pasca tambang. Melalui perspektif *al-tawāzun al-bi'i*, ditemukan bahwa praktik penambangan yang baik adalah mengembalikan fungsi tanah dan air ke fungsi semula dengan kualitas yang lebih baik. Hal tersebut dilakukan untuk menjaga keseimbangan dalam pengelolaan lingkungan dan meminimalkan kerusakan yang diakibatkan, termasuk yang

merenggut nyawa manusia. Untuk itu, pendekatan dan nilai-nilai agama memainkan peran utama dalam menyebarkan nilai-nilai kebaikan di kalangan masyarakat Indonesia yang dikenal sebagai masyarakat religius.]

Keywords: *post-mining, reclamation, eco-theology, and Islamic perspectives.*

Introduction

In Indonesia, the mining sector is one of the most significant contributors to state revenue. It led Indonesia to become one of the largest coal producers in the world after China, the United States, Australia, and India.¹ In 2019, seven coal mining companies management of state-owned goods (BMN) reached IDR 37.61 trillion. This number consists of IDR 585 million in 2017, IDR 26.59 billion in 2018, and IDR 10.95 billion until November 2019.² In 2020 (before the Covid-19 pandemic), this sector can contribute a deposit of IDR 26.2 trillion or 59% of total deposits in the 2020 state budget.³ In addition, coal is also a non-renewable natural resource for fossils, electricity, and other industries such as cement and steel.

However, the profit gained from this industry also has a considerable negative impact on the environment, including the issue of mining pits. Therefore, all parties (as stated in the government regulations) became obligated to rehabilitate ex-mining and reclamation areas. Yet, some of the ex-mining land targets did not reach it. In 2019, of the 6950 hectares of

¹ Redaktur, "Batubara," *Indonesia-Investments*, last modified 2018, accessed May 28, 2021, <https://www.indonesia-investments.com/id/bisnis/komoditas/batubara/item236?>.

² Yusuf Imam Santoso, "Aset Negara Di Pertambangan Rp 37 Triliun," *Koran Kontan*, last modified 2019, accessed May 28, 2021, https://www.djkn.kemenkeu.go.id/berita_media/baca/12947/Aset-Negara-di-Pertambangan-Rp-37-Trillion.html.

³ Arif Gunawan, "Maaf, Batu Bara Telah Dan Masih Akan Jadi 'Nadi' Ekonomi RI," *CNBC Indonesia*, accessed May 28, 2021, <https://www.cnbcindonesia.com/news/20191126194713-4-118223/maaf-batu-bara-telah-dan-masih-akan-jadi-nadi-ekonomi-ri/3>.

reclamation targets, only 6748 were successfully achieved.⁴ While the production amount also exceeds the limit. In 2018, from a production limit of 413 million tons to 477 million tons and in 2019, from 489.7 million tons to 502.6 million tons.⁵ Instead of completing the post-mining land, they are aggressively opening new land.

In 2018, *Jaringan Advokasi Tambang* (JATAM, the association for mining advocates) found 1,735 mine pits in East Kalimantan,⁶ scattered in various districts or cities, such as 842 spots in Kutai Kartanegara, 349 areas in Samarinda and 223 sites in East Kutai. The pits consist of other holes that are still in mining and post-mining productions. These mining pits have cost as many as 36 people lives from 2011 to 2019.⁷

The above matters need serious attention from various parties, including Islam, as the majority religion in Indonesia. Muslims should not separate their religiosity from the material condition of human life as Islam regulates different ethics in human relations to the environment. Islam advocates a deeply interconnected relationship between humans, God, and the environment in its concept of morality.⁸ This article will describe the basic concepts in Islam that are significantly useful for environmental management, especially regarding the mining activities known as *al-tawāzun al-bī'i* (environmental equilibrium). Yusuf Qardawi summarized this concept in early 2000 in his book *Ri'āyah al-Bī'ah fī al-Islām* (The Environmental Management in Islam). This research discusses the emergence of imbalance problems concerning mining activities, especially between the

⁴ Muh Jamil and Teo Reffelsen, *Terus Melegitimasi Lubang Kematian; Kertas Kebijakan Reklamasi Lubang Tambang Di Indonesia* (Jakarta: Jaringan Advokasi Tambang (JATAM), 2020), iii.

⁵ Ibid, iii.

⁶ Estu Suryowati, "Kaltim Punya 1.735 Lubang Tambang," *Jawa Pos*, last modified 2019, accessed May 28, 2021, <https://www.jawapos.com/jpg-today/05/07/2019/kaltim-punya-1-735-lubang-tambang/>.

⁷ Abraham Utama, "Ibu Kota Baru: Ribuan Lubang Tambang Terbengkalai Di Kaltim, 'Cucu Saya Tewas Di Sana, Saya Harus Tuntut Siapa?'" *BBC Indonesia*, last modified 2019, accessed May 28, 2021, <https://www.bbc.com/indonesia/indonesia-50184425>.

⁸ Wan Mohd Nor Wan Daud, *The Educational Philosophy and Practice of Syed Muhammad Naquib Al-Attas; An Exposition of the Original Concept of Islamization* (Kuala Lumpur: ISTAC, 1998), 306.

efforts to gain profits and the risks that the environment and human population must accept. It aims to provide an additional Islamic perspective on environmental issues.

Post-Mining and Reclamation Activities

In *Dictionary of Mining, Mineral, and Related Terms*, reclamation has two meanings. First is restoring the abandoned mining parts such as coal and ore, whether due to fire, water, or other causes. Second, it indicates that reclamation is returning or restoring ex-mining land to its original contours, uses and conditions.⁹ These meanings show that reclamation is an activity that takes place after the process of mining activities and aims to restore the used land.

Indonesia has regulated matters related to mining land reclamation. Law no. 4 of 2009 concerning Mineral and Coal Mining and Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia No. 7 of 2014 concerning the Implementation of Reclamation and Post-Mining in Mineral and Coal Mining Business Activities. The regulation defined reclamation as activities carried out throughout the stages of the mining business to organize, restore, and improve the quality of the environment and ecosystem so that it can function again according to its purpose.

In addition, the Mining Industry should consider doing reclamation or post-mining activities as planned to restore natural environmental and social function based on the local condition. Therefore, the Minister of Energy and the Mineral Resources Republic of Indonesia has updated Regulation Number 26 of 2018 concerning the Implementation of Good Mining Principles and Supervision of Mineral and Coal Mining.

The new regulation explains that reclamation and post-mining processes are inseparable parts of mining activities to maintain environmental balance. As stated in the law, the management plan includes stabilizing the slope, securing ex-mine pits, restoring and monitoring water quality, and water management.¹⁰ Thus, the

⁹ American Geological Institute, *Dictionary of Mining, Mineral, & Related Terms*, Second. (New York: U.S Bureau of Mines, 1996), 2570

¹⁰ Direktorat Jenderal Mineral dan Batubara RI, *Kebijakan Pengelolaan Pertambangan; Aspek Perlindungan Lingkungan* (Jakarta, 2018), 19

Mining Industry must complete these stages before the land is handed back to the government.

The form of ex-mining land management has also been stated in the Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia, No.7 of 2014, Article 12. It says that the reclamation program should be carried out in revegetation or other designations such as residential areas, tourism, water **16**arces, and cultivation areas. In the presentation of the **Directorate General of Mineral and Coal in 2018**, several examples of ex-mines that could be converted into tourist sites were mentioned, such as Taman Tebing Breksi in Yogyakarta, Cinta Balocci Lake in Pangkep, Sulawesi, and Taman Tebing Koja in Tangerang. In addition, some of the ex-mining areas are converted into water sources or breeding areas for fish and cattle.¹¹

The conversion of the former mining land is aimed to have many benefits for the residents and its surrounding environment. However, it must pay attention to other aspects of its utilization, such as its feasibility. Research conducted by Said,¹² for example, shows that the quality of water in ex-coal mining ponds in Tanah Laut Regency, South Kalimantan, met number-one quality standards and was classified as good and safe for use. On the other hand, Kaharapenni's research shows a possible chance for the quality of water in Sungai Patangkep contaminated by the acid water from coal mines.¹³ The status of water quality in the Patangkep River is in C class or moderately polluted, based on chemical parameters. Pagoray also shows that the water temperature in the ex-coal mining pond in Kutai Kartanegara is still standard but has high turbidity.¹⁴ As for chemical parameters, several chemical substances such as pH, NH₃, and H₂S show numbers above the quality standard.

¹¹ Ibid, 13-15.

¹² Nusa Idaman Said and Satmoko Yudo, "Status Kualitas Air Di Kolam Bekas Tambang Batubara Di Tambang Satui, Kabupaten Tanah Laut, Kalimantan Selatan," *Jurnal Teknologi Lingkungan* 22, no. 1 (2021): 48–57.

¹³ Marlina Kaharapenni and Rudy Hendrawan Noor, "Pencemaran Kualitas Air Dari Adanya Potensi Air Asam Tambang Akibat Penambangan Batubara (Studi Kasus Pada Sungai Patangkep)," *Jurnal INTEKNA* 15, no. 2 (2015): 156–160.

¹⁴ Henny Pagoray and Ghitarina Ghitarina, "Karakteristik Air Kolam Pasca Tambang Batubara Yang Dimanfaatkan Untuk Budidaya Perairan," *Ziraa'ah* 41, no. 2 (2016): 276–284.

The gaps of ex-mining pits in Indonesia is relatively high. Until 2018, JATAM found at least 3,092 mine pits left without reclamation and rehabilitation processes.¹⁵ The provinces with the most significant numbers were East Kalimantan (1,754), South Kalimantan (814), and South Sumatra (163). In the range of 2011-2019, at least 143 people died in the former mining hole.¹⁶ ²²Following the applicable law, the implementation of reclamation and post-mining shall be carried out no later than 30 days after mining activities have ceased (see PP No. 78/2010 Article 21).

The conversion of ex-mining ponds into tourism objects, water sources, and cultivation areas may also originate ⁶potential element that causes social problems. Even though the regulation of the Minister of Energy and Mineral Resources, No. 7/2014 ¹⁴as been abolished, the derivative regulation No. 1827 K/30/MEM/2018 states that the use of mining pits for other purposes such as fish ponds, cattle breeding, tourism sites, and others is allowed.¹⁷ This regulation creates opportunities for companies not to close mine pits, carry out rehabilitation and reclamation.

The water quality in the ex-mining pit is no longer suitable, and the soil in the area produced chemical changes from the opening of rock layers of sulfidic compounds. This layer will then undergo oxidation which causes the release of hydrogen ions and sulphate ions. It also causes the decreases in pH of water and soil and increases the soluble micro-elements. Thus, the water and the land cannot be reused as before.¹⁸

¹⁵ Jamil and Reffelsen, *Terus Melegitimasi Lubang Kematian; Kertas Kebijakan Reklamasi Lubang Tambang Di Indonesia*, 18.

¹⁶ Jatam, "Ambruknya Keselamatan Rakyat Dan Infrastruktur Ekologis Sepanjang Jokowi-JK Berkuasa," *Jatam*, last modified 2018, accessed May 28, 2021, <https://www.jatam.org/ambruknya-keselamatan-rakyat-dan-infrastruktur-ekologis-sepanjang-empat-tahun-pemerintahan-joko-widodo-jusuf-kalla/>.

¹⁷ Jamil and Reffelsen, *Terus Melegitimasi Lubang Kematian; Kertas Kebijakan Reklamasi Lubang Tambang Di Indonesia*, 22.

¹⁸ Horst Marschner, *Mineral Nutrition of Higher Plants*, Second. (London: Academic Press, 2003), 641; Pagoray and Ghitarina, "Karakteristik Air Kolam Pasca Tambang Batubara Yang Dimanfaatkan Untuk Budidaya Perairan.", 276.

The fish produced from this pond will also contain heavy metals, dangerous if consumed by humans.¹⁹ In addition, the use of water as a tourism object is no less harmful. The water of the ex-mining pool has the potential to be contaminated by acidic water.²⁰ The acid and heavy metals in the water make it unsuitable for bathing and washing, which may cause cancer and body tremors.²¹

However, the conversion of ex-coal mining ponds also has a lot of significant risk for surrounding areas. This is because the land that should have been rehabilitated and reclaimed was hugely left of being a source of water, irrigation, and tourism objects. In this context, the company, to some extent, has been arguably running away from its responsibility to reclaim the used land.

Why Using Religious Approach

Today, environmental sustainability must be a common concern for all humankind, from politicians, academics, activists, and religious leaders. Moreover, even though Indonesia is not a country based on a particular religion, it has a high level of religiosity.²² Therefore, religious leaders and religious values have a central role in spreading norms within society. Religious norms remained an essential element for decision-making, regulation-setting, and implementation.²³ The function of religion is also a source of ethics and moral values relating to human life, including the relationship with God and the environment.²⁴ These religious

¹⁹ Jamil and Reffelsen, *Terus Melegitimasi Lubang Kematian; Kertas Kebijakan Reklamasi Lubang Tambang Di Indonesia*, 24

²⁰ Kaharapenni and Noor, "Pencemaran Kualitas Air Dari Adanya Potensi Air Asam Tambang Akibat Penambangan Batubara (Studi Kasus Pada Sungai Patangkep).", 156

²¹ Budhi Hartono, "Bahaya, Air Kolam Bekas Tambang Batubara Mengandung Logam Berat," *Tribun Kaltim*, last modified 2015, accessed May 28, 2021, <https://kaltim.tribunnews.com/2015/12/31/bahaya-air-kolam-bekas-tambang-batu-bara-mengandung-logam-berat>.

²² Michel Picard and Rémy Madinier, *The Politics of Religion in Indonesia: Syncretism, Orthodoxy, and Religious Contention in Java and Bali* (Oxon: Routledge, 2011), 94.

²³ Elizabeth Mcleod and Martin Palmer, "Why Conservation Needs Religion," *Coastal Management* 43, no. July (2015): 239.

²⁴ Michael S Northcott, *The Environment and Christian Ethics* (New York: Cambridge University Press, 1996), 25.

elements have an essential role in bridging the treatment of nature, both in a mechanistic and materialistic way.²⁵

In society, religion has a function in teaching awareness of the worldview. This view will later produce a work ethic and life behaviour according to what they believe.²⁶ As Durkheim's argues, religious and moral values cannot be separated from the existence of a society, even become elements of culture.²⁷

Religion contributes to purifying the values and norms formed in society. Still, on the other hand, it also provides standards and critical assessments of the norms and values²⁸ to create a balanced community.²⁹ Hence, when the social order seems imbalanced, religion could take the roles to make the orders back to balance.

Several studies have strengthened the above opinion. Research conducted by Du shows that firms with a high level of religiosity (in this case, Buddhism) have a positive impact in spreading the importance of nature conservation and social concern regarding pollution caused by their industry.³⁰ Even religion in its primitive form or local belief also positively impacts the preservation and protection of nature. As an illustration, Ssebunya and Okyere-Manu's research regarding Karamoja is one of Uganda's most extensive lands, but its people are the poorest.³¹

²⁵ Fachruddin Mangunjaya, *Mempertahankan Keseimbangan: Perubahan Iklim, Keanekaragaman Hayati, Pembangunan Berkelanjutan, Dan Etika Agama* (Jakarta: Yayasan Pustaka Obor Indonesia, 2015), 160.

²⁶ Ridwan Lubis, *Sosiologi Agama: Memahami Perkembangan Agama Dalam Interaksi Sosial* (Jakarta: KENCANA, 2015), 22.

²⁷ Daniel L Pals, *Nine Theories of Religion*, Third. (New York: Oxford Book Company, 2015), 87; Koentjaraningrat, *Kebudayaan Mentalitas Dan Pembangunan* (Jakarta: PT Gramedia, 1981), 144.

²⁸ Lubis, *Sosiologi Agama: Memahami Perkembangan Agama Dalam Interaksi Sosial*, 23.

²⁹ Ibid, 24.; William James, *The Varieties of Religious Experience A Study in Human Nature Being the Gifford Lectures on Natural Religion* (New York: Longmans, Green and Co., 2014), 284.

³⁰ Xingqiang Du et al., "Corporate Environmental Responsibility in Polluting Industries : Does Religion Matter ?," *Business Ethics* 124, no. 3 (2013): 485–507.

³¹ Margaret Ssebunya and Beatrice Okyere-manu, "Moral Responsibility and Environmental Conservation in Karamoja Mining Area : Towards a Religious Engagement," *Journal for the Study of Religion* 30, no. 2 (2017): 90–104.

Within Islam itself, the various concepts of *mu'āmalah* (Islamic law) have discussed how human interacts with environment and nature. Parvezmanzoor states that ecology is an inseparable part of religious *weltanschauung*.³² In promising the importance of a Muslim to protect the environment, he mentioned several philosophical and metaphysical foundations in Islam such as *tawhīd*, *khilāfah wa al-amānah* (stewardship and trust), *sharī'ah* (the ethics of action), and *'adl wa al-i'tidāl* (justice and moderation).³³

Qardawi is a Muslim thinker who provides many views regarding environmental issues from an Islamic perspective.³⁴ He explained that all the main sciences in Islam are closely related and contribute equally to protecting the environment, starting from *uṣūluddīn*, *'ilm al-sulūk* (mysticism), *fiqh*, *uṣūl al-fiqh*, (legal jurisprudence) and sunnah and Qur'anic Sciences (Exegesis).³⁵ Even the first three sciences are knowledge that is studied according to levels in Islam (*marātib al-īmān*), those are *al-islām* (religion), *al-īmān* (faith), and *al-iḥsān* (ethics).³⁶

He also mentioned eight significant discussions about the fundamental values of Islam in protecting the environment. These values include *al-tashjīr wa al-takhdīr* (planting and afforestation), *al-'imārah wa al-tatmīr* (repair and fertilization), *al-naẓāfah wa al-taḥīr* (cleanliness and purification), *al-muḥāfaẓah 'ala al-mawārid* (protecting natural resources), *al-ḥifẓ 'ala al-insān* (protecting humans), *al-iḥsān bi al-bī'ah* (doing good to the environment), *al-muḥāfaẓah 'ala al-bī'ah min al-itlāf* (protecting the environment from damage), and *ḥifẓ al-tawāzun al-bī'i* (maintaining natural balance).³⁷ These values are contained in the Quran, Hadith, and other sources of law in various editors but have the same goal: protecting the environment is not new in Islam.

³² S. Parvez Manzoor, "Environment and Values: The Islamic Perspective," in *The Touch of Midas: Science, Values, and Environment in Islam and the West*, ed. Ziauddin Sardar (Manchester: Manchester University Press, 1984), 151.

³³ Ibid, 155-160.

³⁴ Yusuf Qardawi, *Ri'āyah al-Bī'ah fī Syarī'ah al-Islām* (Cairo: Dar Shorouk, 2001).

³⁵ Ibid, 20.

³⁶ Abu al-Wafa al-Ghanimy At-Taftazani, *Madkhal ilā al-Tasawwuf al-Islāmī*. (Cairo: Dar al-Tsaqāfah li al-Nashr wa al-Tawzī', 1979), 12.

³⁷ Qardawi, *Ri'āyah al-Bī'ah fī Syarī'ah al-Islām*, 57.

Mangunjaya and McKay mention several main foundations in the Qur'an that are related to environmental preservation.³⁸ The primary foundation includes *tawhīd* (divine unity), *ḵalq* (creation), *mīzān* (balance), *iḥsān* (goodness), *fasād* (corruption), and *ḵalīfah* (guardian). Kamali adds several opinions from Qardawi and divides them into two parts. The first part is the principles that become the basis for protecting and preserving the environment, consisting of *tawhīd*, *ḵalīfah* (the vicegerency of man in the earth), and *amānah* (the principle of trust). The second part is actions that contradict the three main principles, such as spreading damage (*fasād*), excessive activity (*isrāf*), and committing acts that lead to harm and danger (*ḍarar*). If the second part is violated, then all the obligations stated in the first part will not be perfect. In fact, in the basic principle (*uṣūliyyah*), a case that becomes a requirement in filling an obligatory issue, then the matter becomes mandatory (*mā lā yatimm al-wājib illā bihī fabuwa wājib*).³⁹

However, Muslims still lack enthusiasm about this issue. Foltz states that countries with a majority Muslim population and abundant rich resources, such as countries in the Arabian Gulf, are still classified as “developing countries” in environmental issues.⁴⁰ As a result, their progress in the industrial realm is not accompanied by a severe concern for ecological issues.

As for Indonesia, concern regarding this matter has begun to grow and initiated in various aspects. It can be seen from the initiation of ecology-based Islamic education,⁴¹ da'wah,⁴² Islamic law⁴³ to Islamic social literacy about ecology.⁴⁴ Several studies were

³⁸ Fachruddin Majeri Mangunjaya and Jeanne Elizabeth McKay, “Reviving an Islamic Approach for Environmental Conservation in Indonesia,” *Worldviews* 16 (2012): 292.

³⁹ Mohammad Hashim Kamali, “Islam and the Environment: An Examination of the Source Evidence,” in *Islamic Perspectives on Science and Technology: Selected Conference Papers*, ed. Mohammad Hashim Kamali et al. (Singapore: Springer Science+Business Media Singapore, 2016), 171.

⁴⁰ Richard C Foltz, *Environmentalism In The Muslim World*, ed. Richard C Foltz (New York: Nova Science Publishers, Inc, 2005), vii.

⁴¹ Eko Asmanto, “Revitalisasi Spiritualitas Ekologi Perspektif Pendidikan Islam,” *TSAQAFAH* 11, no. 2 (2015): 333–354.

⁴² Erwin Jusuf Thaib, “Konsepsi Dakwah Islamiyah Dalam Konteks Konservasi Alam Dan Lingkungan,” *Jurnal al-Ulum* 11, no. 1 (2011): 139–150.

⁴³ Muhammad Harfin Zuhdi, “Fiqh Al-Bi'ah: Tawaran Hukum Islam Dalam Mengatasi Krisis Ekologi,” *AL-'ADALAH* 12, no. 4 (2015): 771–784.

also carried out to disseminate nature conservation based on Islamic values, such as the research by McKay on reforestation efforts in Sumatran forests with religious values,⁴⁵ Jamaldi's research on the movement to save and conserve natural resources in Lake Maninjau on religious values and local wisdom,⁴⁶ and research by Afifah on the analysis of *fiqh al-bi'ah* in a sand mine in Ponorogo.⁴⁷

The Indonesian Ulema Council has also issued several fatwas on mining and environmental preservation on a larger scale. For example, the Fatwa Commission of the Indonesian Ulama Council (MUI) Region IV Kalimantan, on 22 Dzulqa'dah 1427 H/13 December 2006 CE in Banjarmasin, stipulated a fatwa that logging and mining damaging the environment and detrimental to the community or the law state is forbidden (*haram*). Furthermore, all activities and income derived from the business are illegal and forbidden.⁴⁸

In 2011, the MUI also issued a fatwa on Environmentally Friendly Mining. In the fatwa, all types of mining are permitted as long as they are for the benefit of the public, do not cause damage, and are environmentally friendly. One of the critical points is the obligation to carry out post-mining reclamation, restoration and rehabilitation. In addition, mining activities must also avoid various damages (*daf'u al-mafsadah*) such as maintaining

⁴⁴ Heru Kurniawan, "Rekonstruksi Dan Reaktualisasi Literasi Ekologi Sosial Islam," *Jurnal Penelitian* 13, no. 2 (2016): 201–210.

⁴⁵ Jeanne Elizabeth McKay, *Integrating Religion Within Conservation: Islamic Beliefs and Sumatran Forest Management*, ed. Jeanne Elizabeth McKay (Kent: DICE, University of Kent, 2013).

⁴⁶ Jamaldi, "Revitalisasi Nilai-Nilai Agama Dan Kearifan Lokal Dalam Gerakan Penyelamatan Dan Kelestarian Sumber Daya Alam Salingka Danau Maninjau Sumatera Barat," *ISLAM REALITAS: Journal of Islamic and Social Studies* 3, no. 2 (2017): 155–168.

⁴⁷ Eva Nur Afifah and Isnatin Ulfah, "Fiqh Ramah Lingkungan Perspektif Yusuf Qardawi (Studi Kasus Pertambangan Pasir Batu Di Desa Semanding, Kecamatan Jenangan, Kabupaten Ponorogo)" (Institut Agama Islam Negeri (IAIN) Ponorogo, 2019).

⁴⁸ Husin Naparin, "Melindungi Hutan Dan Kelestarian Alam," MUI, last modified 2018, accessed May 28, 2021, <https://mui.or.id/opini/9467/melindungi-hutan-dan-kelestarian-alam/>.

biodiversity, water quality, terrestrial and water ecosystems, impoverishing local communities, and threatening public health.⁴⁹

However, these various regulations often do not work practically. Mangunjaya observes that Indonesia is still in a long struggle process.⁵⁰ As we saw in the initial discussion, coal mining is still the most significant contributor to the state budget. However, with this economic pretext, the state often forgets about the sustainability of its future life and the environmental damage it causes. Therefore, there needs to be a lot of education related to religious values in shaping the character and personality of this “religious” country with the largest Muslim population on environmental concern.

***Tawāzun* as the Principle of Post-Mining Management**

Tawāzun is an Arabic word that means “balanced in measure” or “equal in measure”. In *al-Mawrid*, this word has the equivalent of the word “balance” or “equilibrium”.⁵¹ In his discussion, this word is often juxtaposed with *tawassut* (moderation) and *i'tidāl* (fairness) and is the equivalent of the phrase *wasat* or *wasatiyyah* (moderation).⁵² This concept is derived from the foundation of the verse in QS 67:13, which states that Allah created everything in this world with order and balance. It makes this universe run well and perfectly. Celestial bodies circulate in their respective orbits and do not collide. Humans and other creatures can live together on earth with various types of food and their respective habitats.⁵³

In QS 55:5-9, Allah’s commands humans to do justice and being balanced in everything. An attitude of life that is less than or exceeds the standard will cause damage and have negative consequences. This value applies not only to material things but also metaphysical things. Therefore, even in worship, a Muslim is

⁴⁹ MUI, *Fatwa Majelis Ulama Indonesia Tentang Pertambangan Ramah Lingkungan* (Jakarta, 2011).

⁵⁰ Mangunjaya, *Mempertahankan Keseimbangan: Perubahan Iklim, Keanekaragaman Hayati, Pembangunan Berkelanjutan, Dan Etika Agama*, vii.

⁵¹ Rohi Baalbaki, *Al-Mawrid: A Modern Arabic-English Dictionary* (Beirut: Dar El-Ilm LilMalayin, 1987), 386.

⁵² Kementerian Agama RI Litbang dan Diklat, *Moderasi Beragama* (Jakarta: Kementerian Agama RI, 2019), 16.

⁵³ Qardawi, *Ri'āyah al-Bī'ah fī Syar'ah al-Islām*, 152.

instructed to always act according to the dose and level, not less and not excessive.

In Islam, the words moderate and balanced mean the middle path of two extreme camps. For example, between stingy and wasteful, there is a “generous” character, or between cowardly and recklessness, there is a “brave” character. Balance (*tawāzun*) is one of the bases in creating a moderate life. A Muslim should always maintain a balance between reason and revelation, individual interests and public interest, necessity and volunteerism, ideals and reality, rights and obligations, and between the past and the future.⁵⁴

Two attitudes that need to be avoided by a Muslim are *al-ghulw wa al-ifrāt* (exaggeration) and *al-taqṣīr wa al-tafrīt* (reduction).⁵⁵ The attitude of a Muslim should come out of both, namely being in the middle. For example, in one narration, it is stated that the Prophet Muhammad forbade one of his followers to fast continuously without breaking the fast. He said that this is included in the action that exceeds the limit. This shows that too much in terms of worship is considered disgraceful (*madhmūm*).

If this balance is disturbed, for example, land and water ecosystems, it will have a domino effect on the ecosystem as a whole. This order is the key to creating a happy, prosperous and peaceful life. For example, when humans live in balance, eat to make ends meet, hunt, farm, and trade to fulfil their daily needs, and rest enough, they will be rewarded with a happy, healthy and prosperous life. However, if they go beyond the limit in one of the aspects of their daily life, does not get enough rest, trades too long and heavy, or consumes too much food, something terrible will happen in their life. A declining physical condition to an exhausted psychological state that will ruin them.

The extent of mining land that has been cleared and abandoned without any rehabilitation, revegetation, or reclamation efforts will cause the environmental balance to be disturbed. Four million hectares of land are used for mining, leaving behind barren land polluted watersheds, and depleted groundwater.⁵⁶ In addition,

⁵⁴ Litbang dan Diklat, *Moderasi Beragama*, 18-19.

⁵⁵ Qardawi, *Ri'āyah al-Bī'ah fi Syarī'ah al-Islām*, 153.

⁵⁶ Jatam, “Ambruknya Keselamatan Rakyat Dan Infrastruktur Ekologis Sepanjang Jokowi-JK Berkuasa.”

the land that was supposed to be used for farming was damaged. As a result, the community's food production has decreased. At least 1.7 million tonnes of rice were lost due to the mining area.⁵⁷

The quality of water that has been tainted from the ex-mining pond also should be taken into account. Water, the source of life for living things, has a central position in surviving on this earth. In East Kalimantan, 15 out of 17 water samples from coal mines showed aluminium, iron, manganese content and had a pH above the standard threshold.⁵⁸ Such water causes damage to aquatic ecosystems, including the animals that live in it and the plants it irrigates. When consumed by humans, instead of providing the nutrients with the body needs, they carry harmful substances to humans themselves.

In addition, mining areas abandoned or converted for other purposes also harm the environment and people themselves. The 143 lives that have been lost in the former mining pool are proof of this. If converted into tourist objects and water sources, as previously mentioned, the water content has the potential to cause damage to human skin and carry harmful substances when used for washing or consumption.

Research conducted by WALHI on the spatial planning of South Kalimantan shows that many mining land clearing permits have exceeded boundaries. During the 2015-2020 period, around 36,450 hectares of mineral and coal concessions were in protected areas. The other 233,220 hectares are in cultivated areas⁵⁹. This action is the cause of ecological damage that will lead to flash floods in South Kalimantan in early 2021. The most recent, namely the floods in Berau, which is claimed to be the biggest in the last 20 years, is the actual evidence of the problem. At least 2,507 households have been affected by the flood that has taken place since May 16, 2021. The overflow of the Kelay and Segah rivers was exacerbated by mining practices upstream of the two rivers. Apart from mining, the oil palm plantations in Berau will also reach 139 thousand hectares in 2020. The two largest areas

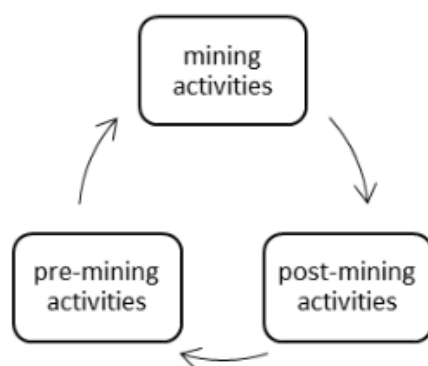
⁵⁷ Ibid.

⁵⁸ Tim Penyusun, *Pelanggaran Hak Asasi Manusia Dalam Kasus Eks Lubang Tambang Batu Bara Di Kalimantan Timur* (Jakarta, 2016), 22.

⁵⁹ Jatam, "Ambruknya Keselamatan Rakyat Dan Infrastruktur Ekologis Sepanjang Jokowi-JK Berkuasa."

are in Segah District, covering 39 thousand hectares and Kelay District, with 32 thousand hectares upstream.⁶⁰ This has not considered the various plants and trees in the forest that are damaged and the opening of new mining areas.

The various natural disasters mentioned above show that the imbalance that occurs harms the survival of living things and the environment around them. Therefore, the concept of *tawāzun* teaches humans to be able to maintain a balance between the right to explore and the obligation to maintain the sustainability of the surrounding environment, as well as between the right to obtain economic benefits and the commitment to support the socio-cultural order in the local area, as well as the right to open new mining land and the obligation to return post-mining land. Here, we conceptualize the concept of *tawāzun* in post-mining management as follows:



Environmental Equilibrium process on mining activities

When they come to clear the land, the land still has various substances needed for multiple plants. Mining activities will damage trees and plants in the forest and the habitat for diverse fauna. Thus, it is obligatory to restore the land to its original state, restore soil fertility, carry out revegetation and reclamation so that the environmental quality and ecosystem on the ground can be reused. If this balance is maintained, then this environment can become a legacy for posterity in the future.

⁶⁰ Fel GM, “Dahsyatnya Banjir Di Berau, Ribuan Rumah Terendam, Tambang Jadi Danau, Dan Murka Alam Yang Rusak,” *Kaltimkece.Id*, last modified 2021, accessed May 28, 2021, <https://kaltimkece.id/warta/berau/dahsyatnya-banjir-di-berau-ribuan-rumah-terendam-tambang-jadi-danau-dan-murka-alam-yang-rusak>.

The mindset of human responsibility in managing the world and everything in it is influenced by their worldview. Thus, human needs to practice three characters: wisdom, purity, and courage. In other words, a Muslim must be knowledgeable, virtuous, and careful to maintain this natural balance.⁶¹

Conclusion

Coal mining is one of the industries that can accelerate the country's economic growth. However, the resulting impact can also damage the environment and socio-ecological balance. Natural disasters that have occurred so far in Indonesia are a form of environmental damage and loss of ecological balance. Furthermore, the threat of extinction threatens not only animals but also human life. There is ample evidence to support this fact, and several cases have been discussed in the previous section.

Therefore, it is necessary to have an essential role from many parties to respond and immediately resolve this issue, both at the theoretical and practical levels. In this case, Islam can contribute to cultivating values that encourage environmental protection activities and lifestyles that emphasize balance. Through the concept of *tawāzun*, the Muslim mindset aims to maintain the balance of everything, including preserving the environment and the sustainability of living things in it. If humans are below the limit or exceeding the limit, then this will only damage and cause various disasters, both natural and humanitarian disasters

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⁶¹ Litbang dan Diklat, *Moderasi Beragama*, 20-21.

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