



Constructing a Qur'anic Dataset on Human–Environment Relations: Insights and Analysis

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ABSTRACT:

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The aim of this study is to develop a comprehensive dataset for interdisciplinary research on the Qur'an and the environment. Conducted with a descriptive–analytical approach, the study examined all verses of the Qur'an based on authoritative translations and commentaries. In this process, 766 verses on human–environment relations were identified and classified into 15 categories, such as humans as part of nature, human vicegerency on earth, the subjugation of nature, legitimate use of natural blessings in this world and the hereafter, and the prohibition of corruption and destruction of the environment. In addition, 833 environmental instances were extracted and grouped into eight main categories: climate and atmosphere (27%), marine environment (1%), animal environment (10%), animal products (6%), plant environment (19%), plant products (8%), the solar system (22%), and human industries derived from nature (7%). Conceptual analysis indicated that these relations can be interpreted at three key levels, ethical, jurisprudential, and eschatological, showing that the Qur'an presents nature as a divine blessing and a trust given to humankind, emphasizing both proper utilization and the moral and eschatological consequences of environmental corruption. This dataset provides a novel foundation for future research in environmental ethics and Islamic jurisprudence, as well as for rethinking responses to contemporary environmental crises.

KEYWORDS: The Qur'an and environment, Environmental ethics, Human–nature relations, Qur'anic dataset, Interdisciplinary dataset, Environmental jurisprudence, Qur'anic ecology.

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1. Introduction

The environmental crisis is among the most pressing global challenges of the contemporary era, arising from the excessive and irrational exploitation of nature and its resources by humankind. Population growth, overconsumption of energy, deforestation, and the loss of biodiversity are some of the key factors that have intensified this crisis (Eslami 2013). In addition to these, natural phenomena such as earthquakes, volcanic eruptions, and storms also affect the environment; however, the human share in generating and exacerbating today's environmental degradation is undeniable (Deyhim 2016).

Several studies have demonstrated that the roots of this crisis are not merely biological or empirical, but also ethical and epistemological. Some scholars argue that the Abrahamic religions, by emphasizing human centrality in creation, have contributed to environmental destruction, since such a perspective implies absolute human dominance over nature. In contrast, other researchers highlight that, in the Qur'an, nature is portrayed as a divine sign (*al-āyah*), and humankind, as God's vicegerent (*khalīfah*) on earth, is responsible for its preservation and development (Beheshti 2011; Javadi Amoli 2007; Mohaghegh Damad 2014). On this basis, the environmental crisis may also be viewed as a moral crisis, and a return to religious teachings could play a constructive role in reforming the human–nature relationship. The Qur'an simultaneously emphasizes legitimate and responsible use of nature while strongly prohibiting corruption and destruction upon the earth (Q. 2:11; 30:41). This perspective fundamentally differs from materialistic approaches in modern Western thought, which regard nature merely as an instrument for human pleasure and profit (Eslami 2013; Rahmati 2008).

Given the importance of this issue, recent decades have witnessed a growing body of scholarship on the environmental dimensions of the Qur'an (Eslami 2013; Javadi Amoli 2007; Mohaghegh Damad 2014). However, most of these studies focus on a limited set of verses and lack a comprehensive and systematically classified corpus. The present study seeks to address this gap by extracting and categorizing 766 Qur'anic verses related to the environment and making them available in the form of a structured dataset. The primary contribution of this research is the provision of a database comprising 833 environmental instances, which can serve as a foundation for interdisciplinary studies in environmental ethics and Islamic jurisprudence.

From the perspective of information science, datasets are crucial tools

for organizing knowledge and enabling reproducible research. The Qur'anic dataset developed here, with its structured design, reusability for future research, and capacity for both quantitative and qualitative analysis, provides an interdisciplinary platform that goes beyond mere collection to facilitate new knowledge production at the intersection of the Qur'an and environmental studies.

2. Literature Review

In recent decades, Islamic scholars have shown increasing interest in the subject of the environment in the Qur'an. Eslami (2013) argued that the environmental crisis did not begin with religion but with the transformation of human attitudes toward nature. He emphasized that Qur'anic teachings oppose consumerism and extravagance. Javadi Amoli (2015), in *Islam and the Environment*, extracted around 150 relevant verses and interpreted the human–nature relationship as one of subjugation (*al-taskhīr*). He particularly stressed humanity's ethical responsibility for the cultivation and development of nature. Mohaghegh Damad (2014), in *Theology of the Environment*, examined about 100 verses and proposed that the root of the environmental crisis lies in humanity's estrangement from the divine ecological order. He emphasized the need for reconnecting humankind with the Creator and acknowledging the infinite divine univers. Beheshti (2011) investigated the role of humans as God's vicegerent (*khalīfah*) on earth and highlighted their responsibility to utilize and develop natural resources. Rahmati (2008), in an article on religion, ethics, and the environment, treated the environmental crisis as an ethical and psychological issue rather than merely a technical or economic challenge. Deyhim (2016) conducted a questionnaire-based study among students and faculty, concluding that Qur'anic teachings on human responsibility and care for nature are widely acknowledged within the academic community.

In addition to these Persian contributions, a growing body of international scholarship has explored the relationship between Islam, the Qur'an, and ecology. Nasr (1996) highlighted the metaphysical and religious foundations of the human–nature relationship in Islam, while Foltz et al. (2003) emphasized the ecological implications of Islamic cosmology and ethics in his seminal volume *Islam and Ecology*. More recently, Gade (2019) examined the religious and social foundations of Muslim environmentalism, underscoring how Qur'anic teachings continue to inform contemporary ecological discourses. These works, although not exclusively focused on Qur'anic exegesis, demonstrate that the Qur'an is increasingly being recognized as a vital source for constructing Islamic approaches to

environmental ethics.

While these studies have effectively illustrated the theological, ethical, and jurisprudential dimensions of the environment in the Qur'an and Islamic thought, they generally remain limited either to a partial set of verses or to a particular aspect of the topic. The present study innovates by systematically reviewing the entire Qur'an and, through a data-driven approach, extracting 766 verses and 833 environmental instances. The results are made available in a structured dataset hosted by the Interdisciplinary Qur'anic Studies Research Institute, Shahid Beheshti University (quran.sbu.ac.ir/peykare).

3. Methodology

This study employed a descriptive–analytical method, chosen because it enables both a comprehensive review of the Qur'anic text and the systematic organization of data for subsequent quantitative and qualitative analyses. The research was conducted in three main stages:

1. Data collection: All verses of the Qur'an were examined in full. Literal translations and authoritative exegetical works, including *al-Mīzān* (Tabataba'i 1995), *al-Kashshāf* (al-Zamakhsharī 1987), *al-Tibyān* (al-Ṭūsī 2010), and *Tafsīr Namūneh* (Makarem Shirazi 1992), were consulted in order to achieve a more precise understanding of natural referents and human–nature relations.
2. Identification and coding of relational categories: From the relevant verses, fifteen distinct types of human–nature relations were identified and systematically coded. These included, for example, creation of nature for humankind, human vicegerency, subjugation of nature, consumption as blessing, corruption in nature, and natural calamities.
3. Classification of environmental instances: Alongside the relational coding, specific environmental instances were extracted and organized into eight main groups: climate and atmosphere, marine environment, plant environment, plant products, animal environment, animal products, the cosmos, and industries based on natural resources.

By specifying the coding scheme and classification framework, the study ensures that the resulting dataset is transparent and reproducible for future scholarship. This approach also situates the work within the emerging field of digital humanities, where corpus-based methods are increasingly applied to religious texts to facilitate new forms of interdisciplinary inquiry.

4. Findings

Drawing on the Qur'anic dataset of human–nature relations, the findings are reported on three levels: types of relations between humankind and the natural world; specific environmental instances; and the semantic–ethical dimensions of these relations. A fourth subsection considers the distribution of verses across *surahs*.

4.1. Types of Human–Nature Relation

To ensure consistency, all relational labels were mapped onto fifteen standardized categories, including creation of nature for humankind, commendable use of nature, natural calamities, consumption as blessing, consumption in the hereafter, eschatological transformations of nature, subjugation of nature for prophets, subjugation of nature for humankind, prohibition of consumption, humankind originating from nature, creation of animals for humankind, human vicegerency, corruption in nature by humans, subjugation of animals, and absence of corruption. The distribution (Table 1; Figure 1) shows that the most frequent categories are creation of nature for humankind (33.3%) and commendable use of nature (21.1%), followed by natural calamities (11.3%) and consumption as blessing (11.2%). Less frequent yet conceptually significant are categories such as human vicegerency (0.5%) and corruption in nature by humans (0.5%), both of which articulate core theological and ethical principles.

Table 1. Types of human–nature relation in the Qur'an

Relation	Number of verses	Percentage
Creation of nature for humankind	248	33.3
Commendable use of nature	157	21.1
Natural calamities (punishment)	84	11.3
Consumption as blessing	83	11.2
Consumption in the Hereafter	50	6.7
Future transformations of nature (eschatological)	47	6.3
Subjugation of nature for prophets	27	3.6
Prohibition of consumption	13	1.7
Subjugation of nature for humankind	10	1.3
Humankind originating from nature	6	0.8
Creation of animals for humankind	6	0.8
Human vicegerency	4	0.5
Corruption in nature by humans	4	0.5
Subjugation of animals	3	0.4
Absence of corruption in nature	2	0.3

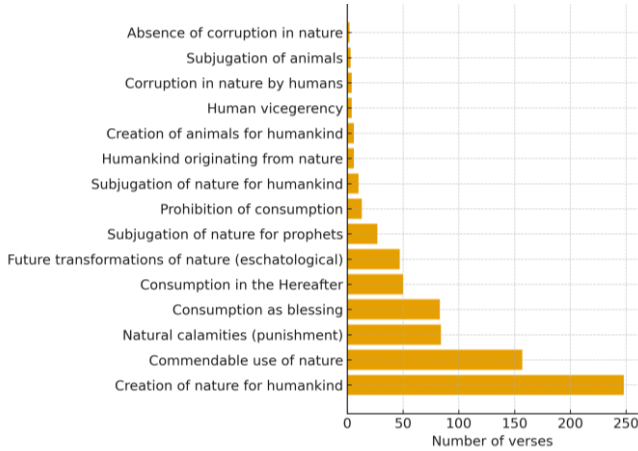


Figure 1. Types of human–nature relation in the Qur’an

These results suggest that while the Qur’an often portrays nature as a divinely created gift intended for human benefit, it simultaneously embeds strong moral constraints against misuse and corruption.

4.2. Environmental Instances in the Qur’an

As Table 2 and Figure 2 illustrate, environmental referents were extracted and organized into eight major groups: climate and atmosphere, marine environment, plant environment, plant products, animal environment, animal products, the cosmos, and industries based on natural resources. Since a single verse may contain several referents, the counts represent the number of mentions rather than the number of verses.

References to the cosmos (26.5%) are the most frequent, followed by plant environments (22.4%) and plant products (14.7%). Climate and atmosphere (11.6%) and animal products (10.7%) also occupy a substantial share, while marine environment (1.4%) is the least represented (Table 2).

Table 2. Environmental instances in the Qur’an

Category	Number of instances	Percentage
Climate and atmosphere	65	11.6
Marine environment	8	1.4
Plant environment	125	22.4
Plant products	82	14.7
Animal environment	33	5.9
Animal products	60	10.7
Cosmos	148	26.5
Industries based on natural resources	38	6.8

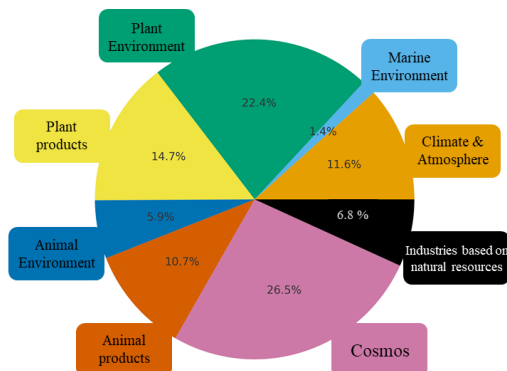


Figure 2. Distribution of environmental instances in the Qur'an

The prominence of cosmic and botanical imagery highlights the Qur'an's consistent invitation to reflection on the order of creation and the signs of divine power manifest in the natural world.

4.3. Semantic and Ethical Dimensions

Beyond descriptive references, the verses also operate on semantic and normative levels. Three interrelated dimensions were identified: ethical, legal, and eschatological (Table 3).

- **Ethical:** Although relatively few verses carry explicit ethical tags, more than a quarter (25%) of verses in the human vicegerency category emphasize humanity's moral responsibility toward the earth.
- **Legal:** In categories such as corruption in nature by humans (50%), prohibition of consumption (30.8%), and consumption as blessing (20.5%), legal implications dominate, particularly concerning permissible and impermissible uses of natural resources.
- **Eschatological:** This is the most pervasive dimension. In consumption in the hereafter (90%) and commendable use of nature (58.6%), verses link human engagement with nature directly to afterlife reward or punishment. Even categories such as prohibition of consumption (15.4%) and consumption as blessing (6%) retain eschatological undertones.

Table 3. Semantic–ethical dimensions of human–nature relations

Relation	Dimension	Number of verses with tag	Percentage
Human vicegerency	Ethical	1	25.0%
Consumption as blessing	Ethical	1	1.2%
Commendable use of nature	Ethical	1	0.6%
Corruption in nature by humans	Legal	2	50.0%
Prohibition of consumption	Legal	4	30.8%
Consumption as blessing	Legal	17	20.5%
Consumption in the Hereafter	Eschatological	45	90.0%
Commendable use of nature	Eschatological	92	58.6%
Prohibition of consumption	Eschatological	2	15.4%
Consumption as blessing	Eschatological	5	6.0%

Taken together, these findings reveal a tripartite Qur'anic framework: the ethical dimension, emphasizing human stewardship; the legal dimension, regulating consumption and preventing corruption; and the eschatological dimension, linking human interaction with nature to eternal accountability.

4.4. Distribution across Surahs

Finally, the dataset allows an examination of distribution across *surahs*. Raw frequency is strongly influenced by *surah* length, with long chapters such as *al-Baqarah* and *al-A'raf* naturally containing more environmental verses. To obtain a more balanced view, the ratio of environmental verses to total verses in each *surah* was calculated. Results indicate that several shorter Meccan *surahs*, such as *al-Shams*, *al-Takwīr*, *al-Naba'*, and *al-Insān*, exhibit the highest relative density of environmental verses. For instance, nearly half of *al-Shams* is devoted to themes of nature (Table 4).

Table 4. Surahs with the highest proportion of environmental verses

Surah	Total verses	Environmental verses	Percentage
al-Shams	15	7	46.7%
al-Takwīr	29	11	37.9%
al-Insān	31	11	35.5%
al-Naba'	40	14	35.0%
al-Naṣr	3	1	33.3%
al-Kawthar	3	1	33.3%
al-'Aṣr	3	1	33.3%
al-Ghāshiyah	26	8	30.8%
al-Muzzammil	20	6	30.0%
al-Taghābun	18	5	27.8%
al-Infītār	19	5	26.3%
Quraysh	4	1	25.0%
Nūh	28	7	25.0%
al-Ikhlāṣ	4	1	25.0%
Qāf	45	11	24.4%

This suggests that the Qur'an does not confine environmental reflection to lengthy legal or narrative passages, but also weaves it prominently into concise, rhetorically powerful chapters, especially those addressing human conscience and eschatological awareness.

5. Discussion

The findings of this study indicate that Qur'anic verses related to the environment encompass three main dimensions: ethical, legal, and eschatological. Quantitatively, the eschatological dimension was the most frequent; however, this should be interpreted within the broader framework of the Qur'an, where eschatological themes in general are highly prevalent. Thus, it would be misleading to conclude that the Qur'an pays limited attention to nature. Rather, the Qur'an establishes a close link between the enjoyment of natural blessings and human destiny in the hereafter. This result aligns with the analyses of Mohaghegh Damad (2014) and Javadi Amoli (2015), both of whom describe the environmental crisis as fundamentally an ethical and theological crisis. Although verses referring explicitly to human vicegerency on earth or to corruption in nature are few in number, they occupy a foundational place in the Qur'anic worldview. The verse of vicegerency underscores human moral responsibility toward the earth, while verses on corruption function as overarching divine warnings that frame the interpretation of all other environmental references.

The data further showed that lawful enjoyment of nature—such as foods and natural blessings—is consistently presented in both worldly and eschatological contexts. This dual framing underscores that, unlike modern materialist approaches, the Qur'an situates nature within a sacred horizon oriented toward the afterlife (Eslami 2013; Rahmati 2008). Analysis of *surah* distribution likewise revealed that shorter Meccan chapters such as *al-Shams* and *al-Takwīr* contain a high proportion of environmental verses. This is consistent with the nature of Meccan *surahs*, which emphasize monotheism, divine signs, and moral foundations, often portraying nature as a mirror of God's power. Overall, by presenting a comprehensive dataset, this study not only provides a quantitative overview of environmental verses but also opens avenues for qualitative and exegetical interpretation. The combination of quantitative and qualitative approaches makes it possible to better appreciate the central role of nature in the Qur'an and to draw upon its resources in addressing contemporary environmental crises.

6. Conclusion

Nature and the environment are introduced in the Qur'an as divine gifts and signs of God's power and wisdom. By conducting a full survey of the Qur'anic text, this study extracted 766 verses and 833 environmental instances and organized them into a structured dataset. The analysis identified fifteen main categories of human–nature relations, including the creation of nature for humankind, human vicegerency and responsibility, the subjugation of nature, lawful enjoyment of natural blessings, and the warning against corruption and destruction. Although categories such as human vicegerency or corruption in the earth appear relatively infrequent, they occupy a foundational position in the Qur'anic worldview, providing the ethical and theological framework within which other verses should be understood. By contrast, categories such as commendable use of nature and consumption in worldly and eschatological contexts are more frequent, underscoring that the Qur'an regards the enjoyment of nature not only as permissible but also as an integral part of divine grace and human moral training.

From a semantic perspective, the findings reveal that environmental verses in the Qur'an span three dimensions: ethical, legal, and eschatological. The predominance of eschatological references reflects the overall prominence of afterlife themes in the Qur'an. More importantly, it highlights that the use, or misuse, of nature is directly tied to human destiny in the hereafter, elevating nature from a mere material resource to a sacred trust linked to human responsibility. Analysis of *surah* distribution further showed that shorter Meccan chapters such as *al-Shams* and *al-Takwīr* contain a high proportion of environmental references, consistent with their thematic emphasis on divine signs, monotheism, and moral guidance.

The main innovation of this study lies in the creation of a comprehensive and indexed dataset, which enables both quantitative and qualitative analyses. This resource can serve as a basis for new exegetical research, comparative studies with other religious texts, and the development of Islamic frameworks for contemporary environmental policy. Ultimately, by emphasizing the blessed nature of creation, human responsibility for its preservation, and the link between this relationship and the afterlife, the Qur'an provides a rich foundation for environmental ethics and law. Harnessing this potential demonstrates that religion, contrary to some modern critiques, is not part of the problem but an essential part of the solution to today's environmental crises.

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