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Review Article

Ethical Considerations in Protecting the Marine Environment from the Effects of Oil Pollution and Its Support by International Law

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Abstract

Introduction: In recent years, approaches based on environmental ethics have emphasized the need to protect the environment from the effects of industrial pollutants. This trend is reflected in new and developing international policies for environmental protection, such that, for example, in the field of protecting the marine environment from oil pollution, the existing international approach is based on the development of laws that protect the environment and protect humans. Therefore, the present study was conducted with the aim of examining ethical considerations in protecting the marine environment from the effects of oil pollution and its support by international laws.
Material and Methods: This study used reliable sources and international scientific articles in the field of environmental ethics and the support of international laws for the marine environment from oil pollution in a descriptive and review manner.
Conclusion: The results of this study showed that it is not possible to define a specific and unified ethical framework for protecting the marine environment. In the present study, three ethical perspectives were discussed, which represent the ways in which people view the environment in general and the marine environment in particular and their interactions with it. These are anthropocentric, ecocentric and biocentric ethics. Five general ethical principles have also been identified, which are included in international legal instruments and thus represent an agreement reached by signatories with different cultural backgrounds. These are: sustainability, conservation of biodiversity, protection, environmental justice and human dignity. In view of this, it is essential to develop international laws to protect the marine environment.
Keywords: *Ethics, Marine Environmental Protection, Oil Pollution, International Law*

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INTRODUCTION

The environment encompasses everything. It includes both humans and nature and the relationship between the two. It affects and is affected by all human activities. The environment of a living being is the space that surrounds the living being and is in contact with it through various mutual relationships. In other words, the environment can be considered a set of animate and inanimate factors that affect the living being in a specific space and at a specific time [1]. Environmental protection has become so important that it has become one of the most important concerns of the global community. Human activity is destroying the environment at an unprecedented rate, and if these activities

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continue unabated, the damage will be severe and irreversible; this damage will harm not only us but also future generations. Given the problem of environmental pollution and the increasing trend of the release of various pollutants into the environment by various industrial, agricultural, service and construction pollutants, many laws and regulations have been adopted at the national level to reduce the effects of these activities. In addition to the measures taken at the national level, this issue has become one of the concerns of the international community. In recent years, approaches based on environmental ethics have emphasized the need to protect the environment from the effects of industrial pollutants. This trend has been reflected in new and developing international policies for environmental protection, such that, for example, in the field of protecting the marine environment from oil pollution, the existing international approach is based on the development of laws that protect the environment and protect humans. Therefore, the present study was conducted with the aim of examining ethical considerations in protecting the marine environment from the effects of oil pollution and supporting it with international laws.

MATERIAL AND METHODS

This study used reliable sources and international scientific articles in the field of environmental ethics and the support of international laws for the marine environment from oil pollution in a descriptive and review manner.

DISCUSSION

Marine environment

The environment is all the environments in which life takes place. A set of external physical factors and living organisms that interact together constitute the environment and affect the growth, development, and behavior of organisms. The human environment includes air, water, soil, plants, forests, pastures, seas, lakes, rivers, springs, aquatic animals, animals, mountains, plains, plains, deserts, cities, or villages. The marine environment also includes the sea, marine aquatic animals, and various marine organisms, including algae and corals.

In short, the following characteristics can be considered for a healthy marine environment:

- Biodiversity.
- Invasive species resulting from activities are limited to those that do not have a destructive effect on the ecosystem.
- Industrial fishing of fish and shellfish is not threatened by the risk of extinction or population decline.
- The abundance of food is sufficient to meet the needs of long-term and continuous life of organisms.
- Continuous changes in the condition of the seabed do not have a negative impact on the marine ecosystem.
- The accumulation of waste and decayed materials is not large enough to be considered pollution.
- The amount of marine debris is not large enough to cause problems for the coast and the marine environment.
- The noise from energy production should not be large enough to have a negative impact on the marine environment [2].

In short, the development should not have a negative impact on marine ecology, biodiversity and land conservation. And if the damage is significant, compensatory measures should be taken to reduce the destructive effects, otherwise the project should be abandoned. Another important issue that is very important in monitoring marine industrial activities is paying attention to human natural heritage and seascapes.

Ethical considerations in protecting the marine environment from the effects of oil pollution

The development of legal instruments and protection frameworks is strongly influenced by the cultural background of the people who develop and adopt them. This cultural background has religious, non-religious, moral and scientific elements that can vary greatly between countries. In developing an international framework for protecting the marine environment from the effects of oil pollution, it is essential to recognize and take these different perspectives into account, and this study represents a step in this process [3].

Another reflection of cultural diversity and different perspectives is related to the diversity in moral beliefs. Philosophers have drawn on a number of concepts to describe some of the fundamental differences between ethics, including the expression of fundamental environmental concerns. These concepts can also arise from more general worldviews and are codified in international law (e.g. human rights). In moral philosophy, the two main theories are utilitarianism and deontology. Classical utilitarianism argues that an action is morally right if it contributes more to the general well-being of man than any other action. Utilitarianism focuses on maximizing the net production of welfare and happiness and the ends rather than the means by which those ends are achieved. Thus, it is often difficult to create space for human autonomy and dignity in a utilitarian context. Respect for human dignity does not necessarily lead to maximizing happiness—determinism may even be seen as a burden [4].

Advocates of deontological ethics place human rights and human autonomy above utilitarian concerns. Protecting human rights is seen as a moral duty, even if greater happiness would be achieved if these rights were ignored. Respect for human autonomy is central to the principles of informed consent (though not its sole justification). The requirement for informed consent, which originated in medical ethics, has been shown to have important applications in other contexts, such as public participation in decision-making processes regarding the disposal of industrial waste.

These two ethical perspectives generally refer only to human beings, their dignity, rights, and well-being, but they also apply to environmental protection. Of course, it is not possible to define a single ethical framework that uniquely defines the goals of marine environmental conservation. Here, three ethical perspectives or perspectives are discussed that represent the ways in which people view the environment and their interactions with it.

Anthropocentric Ethics:

Environmental ethics has developed largely from human-based theories. What is the moral place of humans in the world and why? Although environmental ethics is a relatively young field in philosophy, a number of distinct perspectives on the issue have emerged. The vast majority of contemporary environmental philosophers would probably agree that the most fundamental source of divergence is the tension between two concepts: anthropocentric and non-anthropocentric. Anthropocentrics see humans, their lives, and their experiences as the sole or primary concern for moral standing. Environmental protection is important only insofar as it affects humans. Anthropocentrics acknowledge the long-term effects of human intervention in nature, but are not concerned with the consequences for other forms of life (animals, plants, landscapes, etc.). Non-anthropocentrics reject the claim that moral value can be achieved and justified solely on the basis of human interests, and offer a variety of alternative moral perspectives that largely reflect the ways in which different philosophers have sought to define the precise nature of moral value and standing [5].

Biocentric:

Biocentric is broadly defined as an ethical perspective that claims that moral standing can be derived from a specific biological characteristic of each individual member of a species. Biocentric perspectives lead to different views of the characteristics that form the basis of the relevant moral value or the obligations that arise from recognizing that value. Some biocentric proponents argue that animals have moral standing because of their ability to experience pleasure and pain (sentence) or because of their self-awareness. A necessary consequence of all biocentric perspectives is that individual life forms other than humans can have value in their own right, and should be respected for what they are—not just because they affect the status of humans. Because biocentricity focuses on individuals rather than species diversity, these different perspectives have also been described as an "individualistic" environmental ethic [6].

Ecocentric:

Proponents of ecocentrism reject the assumption that relevant moral value can only be derived from some biological characteristics of individual organisms. Ecocentrists affirm that the diversity of species, ecosystems, rivers, mountains, and landscapes can have value in and of themselves, even if they do not affect the well-being of humans or other individual members of nonhuman species. All ecocentrists place a certain value on the diversity, dynamics, and interactions within a healthy ecosystem, but they differ in their views on the causes and solutions to modern environmental problems. The general concern of this view for the living and nonliving community as a whole lead it to be classified as a "holistic" environmental ethic [7].

Five general principles have also been identified, which are included in international legal instruments and thus represent an agreement reached by signatories with different cultural backgrounds. These are: sustainability, conservation of biodiversity, protection, environmental justice and human dignity [8].

Sustainability:

The essential elements of sustainable development are the "right" to (economic) development. The integration of economic development and environmental protection; the sustainable use of national resources; and intergenerational equity. These elements are often associated with the idea of trying to balance the needs arising from economic growth, social justice, and the preservation of biodiversity. Anthropocentrists, because of the importance they attach to human interests, have little difficulty in supporting the principle of sustainable development. Biocentrics and ecocentrics may agree with the concept of biodiversity conservation as a measure that reflects the intrinsic value of the ecosystem and its components, but clearly any non-anthropocentric proponent has reservations about the value placed on economic growth and development. Indeed, some may reject the concept of sustainable development on this basis, arguing that future environmental protection can only be achieved through fundamental changes in human behavior. However, there is general agreement that the components of sustainable development known as intergenerational equity and biodiversity (herein referred to as "sustainability") should be considered as a moral principle.

Conservation of biodiversity:

Although there is disagreement within the scientific and philosophical communities about the precise interpretation of biodiversity and how biodiversity is conserved in practice, there is a general consensus that the conservation of biodiversity is a fundamental principle in environmental protection. Proponents of both anthropocentric and non-anthropocentric perspectives can agree that the conservation of biodiversity is a valid moral goal because of its

implications for human well-being or for future generations of all living things, or because of respect for the diversity of nature itself. The conservation of the diversity of the gene pool can be justified from both an anthropocentric and an ecosystem perspective, the former because of its potential benefits to present and future generations, the latter because it is an intrinsic part of an ecosystem. However, ecocentrists may value both biotic and abiotic components.

Conservation:

Conservation efforts are usually directed toward the protection of species or habitats or geological features that are important or vulnerable. The concept of "importance" or "vulnerability" may reflect the fact that a species, habitat, or geographical feature is endangered, under ecological pressure, unique, or valuable in its own right. In recent decades, the conservation of flora and fauna has seen a general shift from protecting endangered species to protecting the habitats on which they depend. Proponents of both anthropocentric and non-anthropocentric perspectives can recognize a conservation principle: the former because of direct implications for human interests or indirectly because of human respect for and enjoyment of specific habitats. The latter because either habitats or individual organisms are valuable in their own right. The fundamental conflict for all of these perspectives is the degree to which the conservation principle may override human interests.

Environmental justice:

The principle of environmental justice, also included in the 1992 Rio Declaration, concerns issues of responsibility, compensation and distribution. Among other things, it takes into account the fact that there can be a relationship between the distribution of environmental benefits and harms and seeks to redress this inequality by redistributing the benefits of measures or policies or by demanding compensation for the harm caused. This principle has strong links with the mechanisms for achieving environmental protection and in practice can include a number of sub-principles such as the precautionary approach, the polluter pays, best available technology, etc. Although at first glance this concept may seem strongly anthropocentric, numerous types of harmful effects are included in environmental justice, such as direct harm to humans, indirect harm resulting from damage to the environment, as well as harm to the environment itself (both habitats and inhabitants). The concept is therefore relevant to both anthropocentric and non-anthropocentric perspectives. However, it is somewhat complicated by the fact that two types of justice are involved in environmental protection: distributive justice and retributive justice.

Human dignity:

Respect for human dignity, rights, and self-determination forms a cornerstone of the United Nations Charter. Invoking the principle of human dignity, philosophers can argue that respect for human rights arises from many reasons: the human status as a rational being, the inherent worth of human beings; the human capacity to feel pleasure and pain; or the fact that the observation of human rights violations evokes empathetic feelings of distress in other human beings. Proponents of all three ethical perspectives recognize that human interests are important in assessing environmental impacts, but they disagree about why these interests matter and how they should balance the interests of humans against those of animals and plants. Respect for human dignity lies at the heart of anthropocentric and deontological ethics. And even for the most radical ecocentrics, human interests are important because humans are part of ecosystems.

Petroleum operations and their environmental impacts

Petroleum operations and activities include various stages, including initial exploration, geological studies, exploration, development, exploitation, transportation, storage, refining, conversion, distribution, and purchase and sale of petroleum. According to Article 5 of the Petroleum Law 5313, petroleum operations refer to all activities related to the exploration, development, exploitation, refining, transportation, distribution, and purchase and sale of petroleum. Accordingly, petroleum operations can be divided into two main categories: upstream and downstream operations.

According to Article 9 of Article 5 of the Petroleum Law 5347, upstream operations include all studies and activities related to the exploration, drilling, extraction, exploitation, and protection of petroleum resources. This also includes the transportation, storage, and export of petroleum and includes activities such as prospecting, mapping, geology, geophysics, geochemistry, drilling wells, and related technical services. This category of operations also includes the injection of gas, water or air and any activity that leads to the optimal and maximum extraction of oil resources. In addition, the construction and development of related facilities and industries and their protection for the production and supply of oil are also included in this category. Some experts have also introduced a third category called midstream operations, which is related to the transportation of oil and gas and is considered part of downstream operations.

Although oil and gas have had significant impacts on human life and have brought many blessings, their negative effects on humans and the environment have also been significant. Excessive use of these resources may lead to the destruction of the civilization that gave rise to them. Oil operations such as exploration, development, exploitation, transportation and refining of oil can have destructive effects on the environment and pollute it. In particular, the environmental effects resulting from these operations begin from the beginning of oil exploration activities.

From the beginning of oil exploration activities, its destructive effects on the environment begin. Drilling oil and gas wells and extracting them can cause great damage to the environment. Although the transportation of oil and gas and its consumption can also cause irreparable damage to the environment and cause air pollution, the production of acid rain and climate change, what we are discussing in this talk is the environmental effects of exploration and production operations. Oil and gas exploration and production have potential environmental impacts. These impacts depend on the stage of the project operation, the size and complexity of the project, the nature and sensitivity of the surrounding environment, and the techniques for controlling and reducing pollutants. The most important environmental issues of the oil industry include accidental spills, explosions, operational discharges (produced water and other waste from drilling), and atmospheric emissions [9].

The substances that enter the atmosphere, water, and land as a result of these operations are toxic and harmful because they are combined with salts, organic matter, heavy metals, and carbon dioxide, hydrogen sulfide, and other hazardous gases. The toxicity of these substances has many destructive effects on the environment and, because they are in high concentrations, they remain in the atmosphere for a long time, thus posing problems for the entire ecosystem. The environmental impacts of oil operations can be divided into three categories related to soil, water, and air.

Oil operations can cause serious damage to groundwater reserves and contaminate drinking and agricultural water. This pollution can enter

the food and livestock production cycle and from there enter the human body. And whenever oil operations are carried out at sea, it causes pollution of seawater, beaches, the loss of aquatic organisms and endangering the marine environment.

Most water waste is related to the exploration and production phase as a result of the following factors [10]:

- Waste materials from drilling such as drilling mud, rock and mud removed from wells and other fluids
- Produced water
- Creation of acidic cracks inside the reservoir
- Oil spills
- Waste water used for washing, desalination and cooling.

Produced water is a large part of the water waste resulting from production operations that severely affects the marine environment and, as mentioned in the first topic, its main components include highly concentrated undissolved salts, heavy metals, various chemicals and toxins and hydrocarbons. The main problem of produced water is the effects of toxic substances on marine resources, which are significantly destructive due to the combination of these substances with chemicals found in the sea.

Pollution caused by oil products leaves adverse and irreparable effects on the marine environment, some of which are: mortality of marine animals, problems with fishing, pollution of ports and beaches. Since oil covers the water surface in a thin layer, it has harmful effects on the life of seabirds. Also, part of the oil settles on the seabed, causing the death of a large number of seabed organisms. The presence of oil in the sea causes serious damage not only to the marine environment, but also to the human environment. Among its consequences are: risks from human consumption of seafood, mortality of seabirds and marine aquatic animals, serious damage to the marine food chain by eliminating or reducing the population of a particular species, and pollution of ports and coastal resorts [11].

International legal protection of the marine environment against oil pollution

In general, international instruments on marine pollution tend to distinguish between four main types of marine pollution:

1. Pollution from ships arising from the normal exploitation of the oceans: In the international context, States have a duty to prevent, reduce and control marine pollution from ships. The principles enshrined in the United Nations Convention on the Law of the Sea have been codified by a global convention and several conventions governing regional seas. The overarching instrument is the International Convention for the Prevention of Pollution from Ships (MARPOL), adopted on 2 November 1973 and amended several times. This convention applies to any type of ship operating in the marine environment, including breakwaters, amphibious vehicles [12]. Submarines, sea-going aircraft, and fixed or floating platforms. Pollution from ships is not defined, but its elements are found in the definition of "discharge": "Any defense of a ship for any reason, including abandoning, dumping, pouring, leaking, spreading, or emptying."
2. Intentional and related detailed waste, often industrial: In general, one of the challenges of recent years in the field of environment is the problem of pollution from waste. It is not possible for governments to deal with such waste alone. The very high costs of environmental projects, the need for consultants and skilled specialists and experts, and the necessity of adopting binding international laws are among the factors that have led governments to take action within the framework of international organizations to

protect the environment against pollution from waste [13].

3. Pollution from land-based sources: Land-based pollution is defined as pollution of marine areas resulting from discharges from coastal installations or run-off from other land-based sources or man-made structures. This definition also includes the transfer of pollution from rivers to the sea. Approximately 70% of marine pollution is directly caused by land-based pollution. Land-based pollution is particularly severe in densely populated areas such as the Mediterranean and Baltic coasts, as well as in areas where the population increases during the tourist season. The diversity of land-based pollution sources makes it difficult to combat it. Applicable rules should in principle cover all waters flowing into the sea. The Convention on the Law of the Sea provides that States must take the necessary measures to limit as far as possible the release of toxic, noxious and hazardous substances, and in particular persistent substances, from land-based sources or by air or discharge. The 1997 United Nations Convention on the Law of the Sea of Non-Navigational Uses of International Courts of Justice emphasizes that States bordering the aforementioned waterways shall, as appropriate, individually or collectively, in cooperation with other States and taking into account generally accepted international rules and standards, take all necessary measures to protect and preserve the marine environment, including estuaries. Regional conventions have also frequently addressed land-based pollution based on these principles [14].

CONCLUSION

The results of this study showed that it is not possible to define a specific and unified ethical framework for the protection of the marine environment. In the present study, three ethical perspectives were discussed, which reflect the ways in which people view the environment in general and the marine environment in particular and their interactions with it. These are anthropocentric, ecocentric and biocentric ethics. Five general ethical principles have also been identified that are included in international legal instruments and thus reflect the agreement reached by signatories with different cultural backgrounds. These are: sustainability, conservation of biodiversity, protection, environmental justice and human dignity.

If we think a little about the nature and legal dimensions of environmental issues, it may not be an exaggeration to say that environmental law is at the crossroads of sciences. This interdisciplinary field today, as a specific and specialized legal field in the early years of the third millennium, has gained considerable literature in the world, and numerous Taliban and study groups have been formed in this field in its various dimensions. The widespread attention to issues in this area is rooted in the environmental crisis and focused on the nature and new dimensions of environmental hazards that humanity is facing today.

Oil (including crude oil, natural gas, and gas condensate) is a special and strategic commodity that cannot be placed in the same category as other commodities. This commodity is of great importance to all countries, both producers and consumers. Although oil and gas have had tremendous effects on human life and brought many blessings to them, their negative effects on humans and the environment have not been few, and perhaps their indiscriminate use may lead to intentional destruction that humans themselves have caused.

The relationship between oil and the environment and environmental considerations in this field are primarily examined through relevant documents and laws, which were

analyzed in detail in the research text. As mentioned in the text, both in Iran and internationally, various documents and laws have been adopted to prevent or eliminate the destructive environmental effects resulting from oil and gas-related activities. As mentioned, in Iran, the first specific law related to the environment and oil that generally addressed this issue was the Oil Law of 1987, but the Law on the Protection of Border Seas and Rivers from Pollution by Oil Substances, approved in 1975, also specifically referred to marine environmental issues in the oil sector.

At the supranational level, there are also numerous international and regional documents that place various environmental obligations on subjects of international law in the field of oil and gas pollution; in particular, the 1990 London Convention, which has established a precise and specific framework in this regard. Consequently, what brings the international community to the desired goal and the desired environmental goal is the real commitment of subjects of international law and comprehensive cooperation in this regard.

In other words, the mere existence of a law, especially in the field of obligations that do not guarantee legal implementation, is not effective; therefore, governments should, despite their dependence on oil and the economic benefits derived from it, devote their priority to protecting and supporting the environment and adhere to their international obligations. Based on the studies conducted, it is generally concluded that the environmental impact assessment regulations of Iran are of a general level and only refer to the category in a not very comprehensive framework, while the United States has a comprehensive environmental law and considers environmental impact assessment studies a necessity for its territory.

During the review of the laws and regulations in Iran and the comparison of these laws with the United States, it is observed that despite the existence of the mentioned laws and regulations, which in any case have the legal ability and possibility to control and evaluate activities affecting the environment, but considering that firstly there are problems with these laws and regulations, especially in terms of their non-permanent and non-universal nature, and secondly their dispersion in various laws and regulations, the necessity of formulating and approving a permanent and specific law for assessing the environmental consequences of development in the country is fully felt.

The International Maritime Organization has played an important role in environmental protection by formulating and establishing various conventions and resolutions. The organization's main efforts are carried out by the Marine Environment Protection Committee. This committee, which consists of all member states, is authorized to deal with all issues related to the prevention and control of marine pollution by ships. Other functions of the committee include ratifying and amending the convention and other laws and ensuring their enforceability.

In the discussion of marine environmental protection, which is one of the most fundamental goals and duties of the International Maritime Organization, it is the governments that are able to systematize regulations in line with the flow of sustainable development and social mobility at different levels of society.

The International Maritime Organization has addressed pollution from ships, waste and plastic waste in its new resolutions and approaches. In the new approaches and resolutions of the International Maritime Organization, it has addressed the control of harmful anti-fouling systems on ships, the control and management of ballast water and ship sediments, and the safe and environmentally friendly recycling of ships. Part of the new resolutions and approaches of the International Maritime Organization is about

damage caused by marine pollution. In these new resolutions and approaches of the International Maritime Organization, the principle of shipowners' liability in the event of marine accidents resulting in oil pollution, the establishment of an international fund to pay compensation for oil pollution damage, the development of regulations related to the method of paying damages, the determination of the gross tonnage of the world's merchant fleet, the increase in the ceiling of payable compensation and financial assistance to shipowners, efforts to establish liability and compensation for damage related to the transport of hazardous and toxic substances, the development of a Convention on the Special Legal Regime for Pollution and Damage Resulting from the Transport of Toxic Substances, the implementation of damages resulting from the transport of toxic substances, the creation of a Convention on Civil Liability for Fuel Oil Pollution Damage approved in 2001, and the development of requirements related to the recovery and refloating of sunken ships have been considered. Today, the seas and oceans are at great risk due to the release of a large amount of non-biodegradable waste, and a new scientific study has identified more dimensions of this issue. Studies by researchers at the University of Plymouth in the United States show that even leaving a regular plastic bag in the sea has irreversible effects on the environment. Accordingly, a simple plastic bag gradually decomposes after being left in the ocean water and causes severe damage to marine animals and habitats. Given the increasing pollution of the world's waters, it can be guessed what a dangerous threat this situation poses to human life. There is much evidence that marine pollution is a threat to marine biodiversity. Currently, this diversity is at risk from overfishing, climate change, high ship traffic in the seas and oceans, and coastal industries. However, more research is needed, especially long-term monitoring and assessment, to assess the threat of marine pollution in the sea to marine species.

ETHICAL CONSIDERATIONS

Ethical issues (such as plagiarism, conscious satisfaction, misleading, making and or forging data, publishing or sending to two places, redundancy and etc.) have been fully considered by the writers.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interests.

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