

The Construction of Artificial Islands in the Persian Gulf and the Caspian Sea in the Light of Conferences and the Principles of International Environmental Law

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Abstract

Background and Theoretical Foundations: Environmental conferences and conventions are widely different from other treaties because environmental issues are linked together as links in a chain and accepted based on the common interests of humanity. Also, the principles of international environmental law are fundamental theories on which other behavioral principles and norms are based and can be a guide for the formation of norms and have the context of becoming the provisions of binding documents and rules.

Methodology: The research method of this article is the descriptive and analytical, method in international documents, and the information was collected based on library studies and the review of international documents.

Findings and conclusion: This research showed that the coastal governments that build artificial islands in the Persian Gulf and the Caspian Sea are obliged to commit themselves to regional and international commitments. Therefore The creation of artificial islands in the Persian Gulf leads to the loss of living coral cover, the destruction of aquatic habitats such as sea turtles, a special species of the Persian Gulf region, the extinction of oysters and dolphins, the creation of storms, dust, salinity and turbidity of seawater. The construction of artificial islands in the Caspian Sea, causes a change in the direction of water movement, the loss of Caspian jaws and sturgeon fish, the destruction of sediments, and a change in the movement path, migration, and feeding of animal species. In

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addition, Governments building artificial islands, to further protect and support the marine environment of the Persian Gulf and the Caspian Sea when building islands by committing themselves to regional and international environmental obligations, as well as being inspired by the provisions of environmental conferences and the principles of international environmental law. Scientists can witness the great contribution of these conferences and principles in reducing the environmental consequences of constructing artificial islands in these two water areas.

Keywords: Conferences, Principles of International Environmental Law, Environmental Consequences, Artificial Islands, Persian Gulf, Caspian Sea.

1. Introduction

In a new horizon, some governments on the shores of the Persian Gulf and the Caspian Sea have established artificial islands on the coasts. Among the eight coastal countries of the Persian Gulf and the Oman Sea, the United Arab Emirates, Qatar, Bahrain, Kuwait, and Oman have pursued economic, industrial, and political goals and created settlements to restore land and build islands on the coasts of their countries. They have shown their culture, history, prestige, and development to the world and achieved their interests. Among the five coastal countries of the Caspian Sea, the countries of Turkmenistan, Kazakhstan, and Azerbaijan have included the creation of artificial islands in their development plans because they have shallow beaches with the aim of absorbing foreign currency to their countries from foreign tourists. The growing trend of constructing artificial islands, especially by the UAE in the Persian Gulf, which is considered a semi-enclosed sea, has brought environmental consequences such as delays in water exchange, rising sea levels, and the loss of aquatic organisms, as well as the construction of islands. In the Caspian Sea, which is a closed and enclosed sea between the countries of Iran, Turkmenistan, Kazakhstan, Azerbaijan, and Russia, artificial islands have resulted in environmental consequences such as changing the water flow, increasing dryness, and the destruction of rare animal species (Khodadadi, 2022: p. 5) .



So far, many international environmental conferences and conventions have been held to save and protect the environment of the earth for guiding governments to prevent and reduce environmental pollution by presenting new approaches. The most important of these conferences, conventions, and declarations on international environmental law are Stockholm Conference 1972, Brundtland Commission Report 1987, Rio de Janeiro Conference 1992, Agenda 21, Climate Change Convention 1992, Biological Diversity Convention 1992, Desertification Convention 1994, The 1997 Kyoto Protocol, the 2000 New York Millennium Declaration, the 2002 Johannesburg World Summit on Sustainable Development Declaration, the 2012 Rio +20 to promote sustainable development, and the 2015 Climate Change Conference. Also, in line with the protection of the Persian Gulf environment and the Sea of Oman, the Kuwait Regional Convention for Cooperation on the Protection and Development of the Marine Environment and Coastal Areas of the Persian Gulf (RAPME) between the Islamic Republic of Iran, Bahrain, Iraq, Qatar, Saudi Arabia, and the United Arab Emirates has concluded that the aforementioned governments have committed to use their efforts to protect their common marine environment (Talaie, 2018: p. 283).

With the collapse of the Soviet Union and the emergence of new coastal countries on the edge of the Caspian Sea, the Caspian Sea became more affected by numerous and diverse pollutants. The economic pressures of the newly formed countries, with the establishment of artificial recreational islands and the construction of artificial islands with the aim of oil and gas exploration, have increased the pressure through excessive harvesting of the Caspian Sea, on the other hand, due to the presence of oil resources and oil and gas transmission networks. safe pollution of the Caspian Sea has increased. It can be argued that the entry of political actors into environmental issues has become the formation wave of new literature under the title of environmental geopolitics. Among the important and

prominent topics in environmental geopolitics are the environmental crises of water spaces such as the Caspian Sea (Ramazani, 2016: p. 82).

To protect the Caspian Sea, until now, the regional convention on the Caspian Sea Environment Protection, which is about the Framework Convention for the Protection of Marine Environment of the Caspian Sea 2003, has been signed between five countries of the Caspian Sea, including Iran, Russia, Azerbaijan, Kazakhstan, and Turkmenistan. This convention is the first binding regional legal document after the collapse of the former Soviet Union in 1991 in the field of the marine environment protection of the Caspian Sea. In Article 2, the purpose of forming this convention is acknowledged as follows: The purpose of this convention is to protect the Caspian Sea environment from all polluting sources, including the protection, maintenance, and rational and sustainable use of the biological resources of the Caspian Sea (Jani Pour Eskolaki, 2014: p. 4).

Since our country, Iran is one of the 150 coastal countries and has a total of 3180 meters of coastline in the Persian Gulf and the Caspian Sea, therefore, in terms of compliance with environmental issues, it should be the leader of other countries bordering these two water areas (Khodadadi, 2023: p. 240).

With this explanation, it is necessary to mention that this article consists of two parts, in the first part, the role of conferences and the principles of international environmental law in reducing the environmental effects of the construction of artificial islands is explained, and in the second part, firstly, the artificial islands in the Persian Gulf and the Caspian Sea are introduced and then the environmental effects of the construction of artificial islands in the Persian Gulf and the Caspian Sea are investigated. The purpose of this research is to answer the question that the application of the provisions of environmental conferences and conventions and the principles of international environmental law by island builders can play a role in reducing the environmental consequences of the construction of artificial islands in the Persian Gulf and the Caspian Sea.



2. International environmental law important conferences and conventions

The most important conferences, conventions, and declarations are as follows: the Human Environment of the United Nations Conference on the Human Environment 1972, World Commission on Environment and Development (WCED), the Brandt Land Commission 1987, United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992, Agenda 21 UNCED 1992¹, The United Nations Framework Convention on Climate Change (UNFCCC) 1992, The Convention on Biological Diversity (CBD) 1992, The United Nations Convention to Combat Desertification (Paris) Convention 1994, Kyoto protocol to the United Nations Framework- Convention on Climate Change 1997, United Nations Millennium Declaration New York September 2000, The World Summit on Sustainable Development Johannesburg Declaration 2002, Rio +20 to promote sustainable development in 2012 (United Nations , 2012) and the Climate Change Conference in 2015 (The United Nations , 2015), some of which are explained in the following section (Khodadadi, 2022: p. 114).

1.2. Stockholm Conference on Human Environment 1972

Most of the international environmental law principles emerged after the United Nations Conference on the Human Environment in Stockholm. The Stockholm Declaration (United Nations, 1972) with 26 principles has played an important role in the development process of international environmental law. For example: the seventh principle refers to the duties of governments in preventing the pollution of the seas, and its twenty-first principle, foresees rights based on the responsibility of ensuring or controlling the activities within the territory of a government in a way that

¹Agenda 21 is a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment. Agenda 21, the Rio Declaration on Environment and Development, and the Statement of principles for the Sustainable Management of Forests were adopted by more than 178 Governments at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, 3 to 14 June 1992.

does not harm the environment of the countries. If it does not enter beyond their territory, it is left to that government (Kis, 2012: p. 26).

It can be acknowledged that the governments of the islands in the Persian Gulf and the Caspian Sea, according to the seventh and twenty-first principles of this conference, are obliged to prevent the pollution of the seas and guarantee the responsibility of controlling their activities (Banaei, Ghasemi, 2015: p. 119).

2.2. Rio de Janeiro Conference on Environment and Development 1992

The United Nations Conference on Environment and Development¹, also known as the Earth Summit, was held in Rio de Janeiro, Brazil, from June 3 to 14, 1992. The Rio de Janeiro conference showed how different social, economic, and environmental factors are interdependent and evolve together and how success in one sector requires action in other sectors. The "Earth Summit" concluded that the concept of sustainable development is an achievable goal for all the people of the world, regardless of whether they are located at the local, national, regional, or international level (Mousavi, 2011: p. 43).

The Environment and Development Declaration or the Rio Declaration determined 27 broad and non-binding principles for the healthy development of the environment, and as the Stockholm Conference established UNEP, the Rio Conference established the Sustainable Development Commission to carry out related matters (Najafizadeh Chenari, 2014: p. 14).

3.2. Rio +20 conference to promote sustainable development 2012

The Rio +20 conference reflected a new model for international efforts to promote sustainable development. Some have considered this conference as a new form of international conference that emphasizes implementation through actions and commitments outside the framework of international negotiations. This document also encourages civil society to participate in



partnerships and agreements and take measures in the context of the three main topics of the Green Economy Conference, poverty reduction and a framework for sustainable development (Dabiri, 2017: p.p. 63-73).

4.2. Climate Change Conference 2015

The Paris Conference is under the United Nations Convention Framework on Climate Change concerning greenhouse gas emissions reduction. The main goal of the mentioned conference is to obtain a global contractual agreement for recent climate changes with the participation of all the nations of the world. The Convention was introduced for signature on April 22, 2016 (Earth Day) at a ceremony in New York. Until 2017, 195 members of the United Nations Framework Convention on Climate Change signed it and 147 countries ratified it in their parliaments. The main goal of the conference is to obtain a global contractual agreement for recent climate changes with the participation of all the nations of the world. Therefore, it can be mentioned that the governments building artificial islands in the Persian Gulf and the Caspian Sea, when building artificial islands, must consider the principles of international environmental law, most of which were formed in the aforementioned conferences, and some of which can be applied to artificial islands as well. Moreover, they should also consider the climate change conditions (Khodadadi, 2022: p. 133).

3. The principles of international environmental law effect in reducing the environmental effects of artificial islands

Following the people becoming aware of the importance and status of the environment, and on the other hand, the governments' more attention to the category of protecting it, has caused the formation and emergence of some of the principles and procedures of the environment in various international documents. The international environmental law principles are the principles that are reflected in treaties, binding actions of international organizations, government performance, and soft (non-consistent) obligations. They are potentially applicable to all members of the

international community (Sands, 2003: p. 231). The most important principles and salient points of international environmental law are as follows:

1. The principle of transboundary effects and transboundary damage
2. The principle of caution
3. The principle of prevention
4. The principle of cooperation
5. Data dissemination
6. The polluter pays
7. Sustainable development
8. The principle of governments' responsibility in protecting the environment
9. Marine and waterway environmental protection
10. Water environmental protection
11. The principle of inter-generational and intra-generational fairness
12. The principle of international partnership and cooperation for environmental issues
13. the principle of fair and rational use of countries' natural resources
14. protection of biodiversity non-harmful use of countries' land
15. interdependence of peace
16. Recognition of common but different responsibilities of countries
17. Environment to as the common heritage of humanity
18. The right to a healthy environment as the third generation of human rights
19. The principle of technical warning about imminent danger to countries exposed to environmental danger
20. Exchange of information and advice on environmental issues,
21. Obligation to study and evaluate the environmental consequences of any industrial, commercial, etc. activity,
22. Criminalization of environmental destruction
23. Protection against air pollution



24. The principle of evaluating the transboundary environmental effects of all human activities
25. Protection against noise pollution
26. The impact of nuclear, toxic, chemical and biological materials on the environment
27. Protection of endangered wild migratory species living on land, water or air
28. Education of environmental issues
29. Desertification
30. Application and implementation of rules International environmental laws are in the domestic laws of countries.

Now, mentioning the principles of international environmental law, we express the role of some of them concerning reducing the environmental consequences of the construction of artificial islands in the Persian Gulf and the Caspian Sea (Weiss, 2011: p.p. 1-27).

4. The principle of transboundary effects and transboundary harm, the principle of caution, and the principle of prevention

In this paragraph, principles are discussed, including transboundary effects and transboundary damage, the principle of caution, and the principle of prevention.

1.4. The principle of transboundary effects and transboundary damage

According to the principle of transboundary effects and transboundary damage, no state should exercise its territorial sovereignty in a way that causes serious damage to the environment of neighboring states or seriously disrupts their ecological balance. According to the aforementioned principle, the governments of the Persian Gulf and the Caspian Sea are obliged to take the necessary measures to protect the marine environment of the Persian Gulf and the Caspian Sea when constructing artificial islands within their borders to avoid environmental

damage to the countries. Do not enter near or in front of them (Ziaii Bigdeli, 2018: p.p. 425-426).

2.4. The precautionary principle

In the past few decades, the precautionary principle has been the basis of many agreements, conventions, and statements, and although it has several definitions, there is no reasonable standard for its definition. The most important document in identifying this principle is Article 15 of the Rio Declaration. This article reads: "To protect the environment, governments are obliged to follow a broad precautionary approach as much as possible. If there is a possibility of danger or irreparable damage to the environment, the lack or lack of information and scientific consensus should not be used as an excuse to delay effective measures to prevent the destruction and erosion of the environment. In 2000, the European Union's notification on the precautionary principle, supplementing Article 15 of the Rio Declaration, asked members to take appropriate precautionary measures to deal with environmental threats" (Banafi, Arashpour, 2018: p. 173).

With this explanation, for example: environmental impact studies should be carried out before the implementation of artificial island construction projects in the Persian Gulf and the Caspian Sea, so that according to the principle of precautionary measures, the governments of the island builders at the time of establishing the islands, have sufficient scientific certainty to protect the natural environment and marine organisms. think and reduce the negative environmental consequences of these structures (Ibid, Kis, 2012: p. 79).

3.4. Principle of prevention

In all international environmental law documents, it refers to the principle of prevention or the principle of prevention of certain risks in the field of environment, the main result of which is to protect the environment. The International Court of Justice, as a legal institution for the peaceful settlement of international disputes, has issued opinions in the field of issues related to the principle of prevention in international environmental



law, in cases such as Gabchikovo-Naguimaros and pulp mills, and while emphasizing the importance of this principle To realize it as best as possible, it recognizes the requirements for governments as the main subjects of international law. Governments have also paid special attention to the principle of prevention in their petitions and defenses and have emphasized its necessity and compliance (Razavi Nezhad, 2022: p. 5).

5. The principle of cooperation, data release, and payment of damages by the polluter

Here, the principle of cooperation, the principle of data release, and the payment of damages by the polluter are expressed.

1.5. The principle of cooperation

The principle of cooperation is another principle of international environmental law. Based on this principle, in accidents, natural disasters, or other emergencies that seem to have adverse effects on the environment, governments must immediately notify other countries and cooperate according to the incident (Pourhashmi, 2012: p. 120).

2.5. The principle of data release

According to the principle of data dissemination in international environmental law, governments that build artificial islands, buildings, and facilities must inform other governments about the construction and characteristics of their artificial islands and facilities (Gasemi, 2018: p.p. 130-140).

3.5. The principle of payment of damages by the polluter

The principle of payment of damages by the polluter means that the government that causes intentional or unintentional pollution must compensate for the damages (Mashhadi, 2018: p.p. 24-25).

In other words, the polluter-payer principle is known as the PPP principle. With this definition, the government that created the artificial islands in the Persian Gulf and the Caspian Sea, if it causes environmental pollution,

based on this principle, must pay damages to the affected country (Robinson, Kurokolasoria, 2010: p. 119).

4.5.The principle of sustainable development

The principle of sustainable development means the pattern of optimal use of existing natural resources by the current generation and its preservation for future generations (Khodadadi, 2018: p. 84).

In other words, sustainable development is a development that meets the needs of the present without jeopardizing the ability of future generations to meet their needs. The governments that build artificial islands, when establishing artificial structures in the Persian Gulf and the Caspian Sea, must follow this important principle of environmental protection. consider a sea for future generations (Mir Abbasi, 2015: p. 242).

5.5.The principle of governments' responsibility in protecting the environment

This principle means that governments are responsible for environmental pollution that originates on their land, regardless of whether it is caused by government agents or their citizens. According to this principle, governments building artificial islands in the Persian Gulf and the Caspian Sea are obliged to prevent environmental pollution in the seas with preventive measures (Abbasi Ashlaghi, 2010: p.p. 47-64).

6.Introducing artificial islands in the Persian Gulf and the Caspian Sea, their environmental effects, and restoring the situation to its former state

The environmental effects of the construction of artificial islands on the health of the sea ecosystem are one of the biggest obstacles for many governments to establish artificial islands. In countries where environmental protection is seriously supported by public opinion, violations of environmental obligations by those governments are prosecuted, but for the countries of the Caspian Sea and the Persian Gulf, the environment is not the priority of public opinion (Khodadadi, 2021: p. 267).



In industrialized countries, especially in Europe, determining the necessity of building an island and justifying its construction is the first step towards its construction. Nevertheless, in the coastal countries of the Caspian Sea, development, attracting investment, and ensuring the return of capital are considered the top priority (Farajpour Tekalo, 2017: p. 76).

The impact and losses of the construction of artificial islands on the Persian Gulf, which has more than 600 species of aquatic animals, including 500 species of fish, 15 species of shrimp, and 5 rare species of sea turtles, are large. Also, the Persian Gulf has coral reefs and algae communities, it is mangrove and mangrove trees. There is no doubt that the formation of such islands and buildings will endanger its animal habitat and plant life (Zistonline, 2019). The Persian Gulf region and the Caspian Sea are among the sensitive environmental areas of the world. Therefore, the pollution caused by the construction of artificial islands in these two regions and the pollution caused by the presence of refineries, oil tankers, and oil spills have caused their fragility (Ghaffari, Habibzadeh, 2017: p. 264).

1.6. Artificial islands in the Persian Gulf and their environmental consequences

Among the artificial islands that have been built in the Persian Gulf by the United Arab Emirates so far, we can mention: the artificial islands of Al Saadiyat, Rim, Almeria, Yas, Hadirat, Zayanuri, Delma, and Lulu in Abu Dhabi. Also, the artificial islands of Burj Al Arab, Jumeirah, Jabal Ali, Deira (Dira), Jahan Archipelago, and Blue Waters have been established in Dubai. Al-Nujum artificial islands were built in Sharjah and Al-Marjan artificial island was built in Ras Al Khaimah. The construction of a large number of artificial islands in the UAE indicates that the creation of economic benefits through the construction of artificial islands has been considered by this country (Kavya, Gassi, 2020: p.p. 1-4).

It should be acknowledged that the UAE island development plan started from the beginning with the goals of reclamation of the land, expansion of the beaches, increasing the land area in the Persian Gulf, showing prestige and development, and creating resorts to attract tourists (Mehul, 2021: p. 583).

Among the other artificial islands built in the Persian Gulf and the Oman Sea is the Moj artificial island project in Oman, which was started in 2005 by the order of the Sultan of Oman, and the project was completed in 2008-2009 previous, construction (Ghasemi, 2015: p. 95).

Qatar also showed by building Pearl Island that it has made similar efforts as the United Arab Emirates. Pearl Island was opened in 2009. The mentioned island is built on an area of 1000 hectares (Ghaffari, Habibzadeh, 2017: p. 267).

This island is one of the largest artificial islands in the Middle East and is divided into 12 regions and each of these regions has a distinct architectural style. Thematically, they are reminiscent of Arabic, Mediterranean, and European cultural elements. This island is the first land that has been made available for the free ownership of any foreign citizen (glli-us.org, 2021).

Green Island in Kuwait is another artificial island built in the Persian Gulf and one of the attractions of this country, it was established in 1988 next to the coast of Kuwait. The artificial island of towers was also built by Kuwait, which is a tourist project and is the first of its kind. This artificial island is connected to the mainland by a 1 km bridge. It should be noted that several islands have been built in Bahrain so far, including Amwaj, Dorat, Al-Marsa Floating City, Mahi, Dareh Al-Bahrin, and Tala (Dadandish, Rahnavard, 2013: p. 116).

One of the positive consequences of the construction of islands in the Persian Gulf and the Sea of Oman is that it has turned it into a peaceful and economic gulf and has led to the flourishing of the tourism industry, economic growth, political stability, and regional cooperation, and it is one



of the most important negative consequences of artificial structures and facilities (Ibid, Ghasemi, 2018: p.p. 137-139).

2.6. Destruction of living coral and aquatic cover and mangrove forests in the Persian Gulf

One of the environmental consequences of the establishment of artificial islands in the waters of the Persian Gulf, which is a semi-enclosed sea, is the loss of living coral cover, which is one of the important potentials of biological accumulation in the Persian Gulf and the Sea of Oman (Rezaei, Valizadeh, 2014: p.p. 1-9).

Mr. Almoudi, the general secretary of the Rapami regional organization, believes that the destruction of coral islands and natural habitats to create a resort is a kind of madness. He believes that water should be taken into the deserts instead of destroying and destroying the environment of the Persian Gulf by creating land (Islamiyeh Hamdani, Nikbakhsh Sharafshah, 2017: p. 37).

The creation of islands and artificial structures leads to the destruction of the aquatic habitat of the Persian Gulf, including sea turtles, a special species of the Persian Gulf region, and the extinction of oysters and dolphins. The Persian Gulf has many habitats with high diversity, such that more than 600 species of aquatic animals live among its grasses. The forests of mangrove trees and mangroves are considered to be other attractions of the Persian Gulf, which are now at risk of extinction due to the construction of artificial islands and facilities in the Persian Gulf. Also, the threat to the biological security of migratory birds and living creatures of uninhabited islands in the Persian Gulf is one of the environmental consequences of the construction of islands in the Persian Gulf (Ibid, Abbasi Ashlaghi, 2013: p.p. 48-64).

3.6. The natural destruction of the seabed and the increase of land masses in the sea

The natural destruction of the seabed and the valuable sediments of the bed and the removal of sand from the bed and subbed of the Persian Gulf and the Sea of Oman for the construction of artificial islands projects have caused the transportation of sediments in the waters of the Persian Gulf and the Sea of Oman (Asgari, 2013: p. 22).

According to the opinion of the Institute of Water, Environment and Health affiliated with the United Nations University, in the report published by the United Nations University, there are lessons from the Persian Gulf and the Sea of Oman, which are comprehensive and an obstacle to the category of environmental aspects and the effects of the increase of dry land in the sea. and the increasing effects of the construction of artificial islands, structures, and facilities on the Persian Gulf ecosystem (Iqbali Zarch, 2011: p. 155)

3.4. Salinity, turbidity, temperature rise, and sea level rise

Due to the semi-closed of the Persian Gulf with the construction of artificial islands, has caused many environmental crises, including salinity, turbidity, temperature rise, sea level rise, water darkness, increase in beaches, and pollution of the marine environment of the Persian Gulf. It is also a reason for the change in the natural water flows disruption of the self-purification ability and the increase of dry lands in the Persian Gulf (Ibid, Ghasemi, 2018: p.p. 137-139).

4.4.Environmental climate effects and increase in storms and dust

Environmental climatic effects caused by the conversion of parts of the sea to land have caused a decrease in the specific heat capacity of the region, a drier climate, an increase in storms, and the creation of dust (Wafaei, 2014: p. 227). Also, it should be mentioned that the artificial islands and their inhabitants in the Persian Gulf are facing natural disasters such as floods, tsunamis, and tropical storms (Mahmoodian, 2010: p.p. 1-11).



5.Introducing artificial islands in the Caspian Sea and the environmental consequences of their construction

The construction of the first artificial island in the Caspian Sea was started by Kazakhstan in the Western Kashagan region. As part of the oil exploration and exploitation programs in the northern Caspian Sea, this country started the construction of artificial islands in 2001. The Kashagan oil field development project involves the construction of artificial islands and ice barrier structures in the North Caspian Sea in Kazakhstan, and the artificial islands for oil drilling activities have been completed so far. The artificial ice protection structures around the oil drilling islands (with dimensions of 90 m x 110 m and 160 m x 250 m) are to protect the island from ice protrusions. Icebreakers continuously break the ice entering the island (Pauwels, Kadeyeva, 2020: p.p. 134-140).

The artificial island of Di in the Caspian Sea has also been created by Kazakhstan, 85 km from Atyrau, using 3.5 million tons of stone and slate. artificial and ice barrier and protection structures in the North Caspian Sea by the country of Kazakhstan. The project started in May 2001 and a total of eight artificial islands for oil drilling activities were completed by August 2010. The place of construction of facilities and artificial islands is in a very sensitive environmental area designated as a "special protected area", where the water depth usually varies from 1.5 meters to 6 meters (kasktas, n.d.).

The Republic of Turkmenistan is also building a very large artificial island in the Caspian Sea near the water borders of Iran under the Las Vegas project. The financing sources of this big project are huge gas resources in Turkmenistan, which has the fourth largest gas reserves in the world. Not long ago, the "Neutral Turkmenistan" newspaper reported that they had added another artificial island with an area of 170 hectares in the Turkmen section. It should be noted that this island has become the habitat, nesting, and wintering of flamingos, swans, geese, ducks, herons, pelicans, and

other bird species. In general, experts consider this island as a place for ornithology and in the long term for ecological tourism (Azernews, 2018). The government of Turkmenistan is making significant plans to build artificial islands in the Caspian Sea. The construction of the Caspian artificial island is part of the \$5 billion "Avaze" tourism project in Turkmenistan. 25 km south of Baku, the artificial islands of Azerbaijan called Caspian consist of 41 artificial islands. The area of these islands is 3000 hectares. This city is being built to house one million people and build the tallest tower in the world with a height of 1050 meters. It should be noted that the artificial islands that were established in the northern part of the Caspian Sea for oil production are located in earthquake-prone and high-risk areas, which are threatened by earthquakes and landslides. The South Caspian and a large part of the Middle Caspian are also at risk of earthquakes. For this reason, the construction of artificial structures for oil and gas production and the laying of oil pipelines on the Caspian Sea bed is full of accidents and a huge amount of oil leaks as a result of earthquakes and ultimately cause negative environmental consequences. Caspian reefs and griffons in the southern part of the Caspian Sea, especially in the Republic of Azerbaijan and Turkmenistan, the water area northwest of Bandar Anzali and in the north of Bandar Turkmen (Dashli Bron and Qezal Tepe area) are considered a positive sign and worthy of attention from the point of view of the presence of oil and gas. These gulfs make up about 13% of the world's gulfs, but although they are a good tool in oil exploration, due to unwanted eruptions during drilling, they can cause many environmental hazards in the Caspian Sea (Ramazani, 2016: p. 92). Now, in this part, the consequences and environmental effects of the construction of artificial islands, buildings, and facilities in the Caspian Sea, including disturbance in the water flow pattern of the Caspian Sea, loss of sediments, destruction of caviar fish and Caspian jaws, are investigated.



1.5. Disturbance in the water flow pattern of the Caspian Sea and loss of sediments

The construction of artificial islands and facilities by countries such as Kazakhstan, Turkmenistan, and the Republic of Azerbaijan on the edge of the Caspian Sea, which is considered a closed sea, has caused problems such as disruption of the water flow pattern, destruction of sea surface sediments and the death of aquatic life. All in all, island construction projects on the edge of the seas create problems, the most important of which is the loss of sediments that have accumulated on the seabed for thousands of years (Pouralam, 2017: p. 2).

2.5. Destruction of caviar fish and Caspian jaws

The construction of artificial islands, oil facilities, and buildings in the Caspian Sea is a serious threat to one of the most important habitats of sturgeon and Caspian jaws, and it can be said that the artificial structures have disrupted the entire plant and animal environmental system in the Caspian Sea and created suspended particles and They get scratched on the skin of aquatic animals (Kozegar Koleji, 2017: p. 3).

3.5. Change in the path of movement, migration, and feeding of animal species

The general flow of the Caspian Sea is from west to east, and the disruption of the water flow pattern can fundamentally change the path of movement, migration, and feeding of all Caspian animal species.

4.5. Environmental pollution with water softeners and failure to create a sewage treatment system

The installation of water softeners has many environmental consequences and effects, which has caused the concern of environmentalists. Also, among other environmental concerns surrounding island construction projects is how to dispose of artificial islands' wastewater (Ibid, Kozegar Kalji, 2017: p. 4).

Having said that, concerns about the entry of sewage from artificial islands and structures into the Caspian Sea are a minor risk, and if a country wants

to build artificial islands or buildings with the help of world banks, it must set up a sewage treatment system (Pouralam, 2017: p. 3).

6. Restoring the situation to the previous state concerning the environmental damage caused by the construction of artificial islands

Concerning the issue of the construction of artificial islands in the Persian Gulf and the Caspian Sea and their environmental effects, the question comes to mind that if the builders of the artificial islands and facilities violate their international obligations, can the governments that violate the international obligations be able to compensate for the damage? Apply the option to restore the situation to the previous state. The answer to this question is that unlike other areas of international law, where the method of restoring the situation to its former state is one of the appropriate methods for compensation, in international environmental law, in practice, achieving such a method is not possible due to the existence of factors. These factors are as follows:

1. Many environmental damages are irreversible due to the nature of environmental elements. For example: if an animal or plant species becomes extinct due to the construction of artificial islands and facilities in the Persian Gulf or the Caspian Sea, there is a very small chance that such an environment can be revived even assuming a huge scientific leap. Even if a small number of the desired species is produced through genetics, without a habitat in which it can grow and develop, this species certainly cannot continue its life independently. That is, such a creature without a natural habitat is a replica of an organism that is only alive.

2. On the other hand, the avoidance of governments that are victims of environmental damage from filing claims for compensation, causes the environmental damage to remain uncompensated and

3. In today's era, there is an increasing tendency in the procedure of governments to impose the main responsibility of compensation for environmental damage on the shoulders of the perpetrator. Private activity is the source of pollution and subordinating the government's responsibility, and since the private agent cannot compensate for environmental damage in connection with restoring the situation to the



previous state (both in terms of expertise and economic ability). Therefore, according to the international documents related to the compensation of environmental damages, until now, the compensation payment method has been replaced by measures of restoring the situation to the previous state (Shah Hosseini, Mashhadi, 2017: p.p. 141-165).

In general, it can be said that the construction of artificial islands by the coastal governments of the Persian Gulf and the Caspian Sea following the 1982 Convention on the Law of the Sea is legitimate, but the proposed convention has paid special attention to the need to pay attention to the rights of neighbors and preserve the marine environment in the construction of artificial islands (Khodadadi, 2021: p. 281).

Conclusion

According to the present research about the conferences and principles of international environmental law and their role in reducing the environmental consequences of the construction of artificial islands in the Persian Gulf and the Caspian Sea, the legal achievements showed that:

-Conferences and conventions on environmental issues are connected as links in a chain and have been accepted based on the common interests of humanity. The principles of international environmental law are fundamental theories on which other principles and behavioral norms are based and They are a guide for the formation of norms because they have the context of becoming the provisions of binding documents and laws, they play an undeniable role in the development and consolidation of international environmental rights.

-The creation of artificial islands in the Persian Gulf leads to the loss of living coral cover, the destruction of aquatic habitats such as sea turtles, a special species of the Persian Gulf region, the extinction of oysters and dolphins, the creation of storms, dust, salinity and turbidity of seawater. The construction of artificial islands in the Caspian Sea, causes a change in

the direction of water movement, the loss of Caspian jaws and sturgeon fish, the destruction of sediments, and a change in the movement path, migration, and feeding of animal species.

- International law establishes binding rules for governments through treaties, agreements, and customary rules. In this way, governments are responsible for violations of principles, including the principles of international environmental law and international rules, and if a violation occurs, the affected government can resort to diplomatic measures or arbitration, as well as other ways to compensate for damages in international law.
- Governments building artificial islands, to further protect and support the marine environment of the Persian Gulf and the Caspian Sea when building islands by committing themselves to regional and international environmental obligations, as well as being inspired by the provisions of environmental conferences and the principles of international environmental law. Scientists can witness the great contribution of these conferences and principles in reducing the environmental consequences of constructing artificial islands in these two water areas.

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