

Protection of water resources to achieve water security in Algeria – the efforts of the state

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Abstract:

The study concluded that the Algerian state has spared no effort in its environmental endeavors, through laws related to environmental protection, such as the law on management, control and disposal of waste; the law on air quality and atmosphere protection; international agreements and treaties on environmental management and the allocation of bodies responsible for environmental protection; and the imposition of new types of taxation, known as environmental taxation. It has also established the Ocean and Environmental Protection Funds and the Ocean Development Fund.

Keywords: Water resources, Algerian law, water security.

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I- Introduction:

In his interaction with his environment, man has actively contributed to the disruption of the natural balance by trying to make the most of the components of the environment without paying any attention to the damage he may cause to it and to other living organisms. With the increase in human activity, development and expansion on land and sea, his exploitation of water resources has increased to meet his needs, and with it the rates of pollution that have affected this vital resource have increased.

Many countries have called for the establishment of legal systems to protect the aquatic environment from pollution. Many environmental scientists and legal scholars have gathered around this issue, and many conferences have been held to discuss this problem, diagnose it, and develop solutions.

Based on the above and as a result of the Algerian government's adoption and continuous efforts to implement the protection of the aquatic environment, in addition to the concept of environmental security entering the world of institutions that have become required to reconcile their economic goals and customer requirements as a condition for achieving their growth and ensuring their survival. Our problem came to shed light on the reality of implementing the state's efforts in Algeria and the relationship between the laws imposed by the government in the field of protecting the aquatic environment. Accordingly, our question came as follows:

What are the state's efforts to protect water resources in Algeria to achieve water security?

In order to address this question, we divided it into the following sub-questions:

- What is environmental pollution?
- How are water resources protected?
- Did the Algerian state seek to achieve water security or not?

Based on the problem raised and the sub-questions, we identified the following hypotheses:

The first hypothesis is that the state's efforts to protect water resources are still insufficient.

The second hypothesis: Algeria has strived with great effort to achieve water Environmental Protection and thus water security.

Research structure:

The first axis: explanation of the terms (Management, Environment, and environmental pollution);

The second axis: The idea of contaminating the aquatic environment.

The third axis: The state's efforts to safeguard the environment in the country.

The method used:

The method that we followed in our study was the following. Of this topic is the descriptive-analytical method, which is based on combining a critical study in which ideas and information derived from several references in Arabic were relied upon . Besides the reports issued by the competent journals, and the investigative approach in an attempt to collect most of the laws and legislations issued on the protection of Water Resources in Algeria.

Research objectives:

The main objective of these studies is to identify the reality of environmental protection, especially aquatic ones, such as introducing some The state's efforts to ensure environmental protection in Algeria include elements like the environment, pollution, ecosystems, environmental management, and the concept of pollution of the aquatic environment.

The first axis: explanation of the terms (Environment, Environmental Management and environmental pollution).

The concept of environmental management systems is explained, it is necessary to first identify some related concepts that help us understand and determine the meaning of this concept. The most important of these concepts is the environment, pollution, ecosystems, and environmental management.

- **The concept of the environment:** the linguistic origin of the word environment in the Arabic language goes back to the word "boa", which means the House, place or ocean where a person lives (Al-Jilali, 2000, p. 19), As for the term, the environment was defined The environment surrounding the institution is according to the International Organization for Standards and Metrology. includes air, water, soil, Natural Resources, plants, animals, and man, and the interferences of all these elements and extends to the surrounding environment from within the institution to the global system. (Raad, 2000, p. 27) The Stockholm Conference of 1972 also gave a broad understanding of the environment, so that it came to denote more than just natural elements, but the stock of material and social resources available at some time, somewhere to satisfy human needs and aspirations. (said, 1990, p. 04) The law in Algeria states that the natural environment consists of living and nonliving elements, such as air, water, earth, soil, plants and animals, as well as genetic heritage and ways of interacting with them. (Official 2003).

- The concept of pollution:

Pollution is an environmental problem that clearly emerged after the advent of the industrial revolution, it has received study and attention because its harmful effects included man himself and his property, and also disrupted many that pollution is described as the heir that replaced famines and epidemics, this reflect sits seriousness and extent of harm, as it has extended to all areas of human life physical, health, psychological and Social, It has been entrenched in the minds of many that pollution is the only problem with the environment. (Rasheed, p. 11) .The Algerian legislator has defined pollution as every direct or indirect change to the environment, caused by every action that occurs or may occur in a situation harmful to the health and safety of man, plant, animal, Air, water, collective, Collective and individual property.

- Ecosystem:

an ecosystem is one of the living and non-living components that interact with each other and in which living and non-living people exchange relationships and influence each other according to a flexible, balanced system, so that they continue to play their role in life (yunus, 2008, p. 29) Some researchers The concept of ecosystems used in natural sciences could be applied to the social sciences of organizations.

- **Environmental management:** it is a set of dynamic tools oriented towards action and taking actions to help formulate Implementing and monitoring strategies for environmental protection, promotion, and upkeep

- **An environmental management concept :**

After touching on the relevant concepts, the environmental management system can be defined according to the ISO organization as "Organizational structure, activities, planning, responsibilities, practices, procedures, processes and resources related to the development of environmental policy are included in the overall management system." and "a structure for managing organizations in order to assess their environmental impacts", is " The management system at the enterprise is used to develop and implement Environmental Policy and management of environmental aspects. " and in a clearer definition is described as pa After we touched on the relevant concepts, the environmental management system can be defined according to the ISO organization as "Organizational structure, activities, planning, responsibilities, practices, procedures, processes and resources related to environment policy are included in the overall management system, including, reviewing and maintaining it" is "a structure for managing organizations in order to assess their environmental impacts", is " Environmental Policy and management of environmental aspects are part of the management system at the enterprise issued in the development and implementation of Environmental Policy and management of environmental aspects", and in a clearer definition is described as part of the management system at the enterprise exist The management system at the enterprise issued in the development and implementation of Environmental Policy and management of environmental aspects is part of the management system issued in the development and implementation of Environmental Policy and management of environmental aspects.

While providing a framework for determining, managing, evaluating and improving environmental performance, but omits reference to achieving compliance with environmental laws. In other words, it is described as the process by which an organization manages resources efficiently, taking into account all aspects of Health and safety and linking them with the way stakeholders and cost In other words, it is described as the process by which an organization manages resources efficiently, taking into account all aspects of Health and safety and linking them with the way stakeholders and customers perceive how the organization works. The importance of the organization in managing resources efficiently is linked to the benefit of the individual and society. It is an integrated and broad system aimed at reducing pollution and preventing whenever possible.

The second axis: the concept of pollution of the aquatic environment:

The term pollution needs to be adjusted in the language and terminology before we can comprehend the meaning of water contamination.

.Definition of pollution :

Pollution in the Arabic language is two types: moral pollution and physical pollution.

Physical contamination: Anything foreign from the components of a substance is mixed with the substance itself. It is believed that the water is polluted with mud. The moral pollution is said to be the pollution of any madness, It is also said that it is caused by the fact that please is. (daykh, 2013 , p. 170) The benefit to anyone who does not have it, these two types do not depart from the verbal meaning of the word pollution, which is desecration, defilement and spoilage-a change in the properties of an object-a meaning that approaches the scientific concept of pollution.

Legal definition of pollution:

The Algerian legislature defines pollution according to Article 04 of Law No. 10-03 of 2003 on Sustainable development and environmental protection, as any direct or indirect change to the environment, caused by any act that causes a situation harmful to human health and safety, plant and animal, air, water, land, collective property (qarawi و dilimi) and individuals. According to this definition, the damages that are the reason for the legal protection of an environment are those that cause a change in the environment and are caused by man, and this change in the environment occurs (muhamadu, 1993) Pollution caused by nature itself, such as floods and volcanoes, is not an area of legal protection, and a change in the environment that does not adversely affect ecosystems or the environment may not warrant attention. (abtisamu ,2009).

- **Definition of water pollution:**

Any substance or effect introduced into the water is called aquatic pollution. That leads to an adverse change in the aquatic environment, in terms of affecting the growth rate of living species or in terms of affecting food chains. "It is also known as the "desecration of rivers, seas and oceans." In addition to rainwater, wells and groundwater (Ali ، 2006), this makes this water unfit for humans, animals, plants, or living organisms living in water bodies. "Water pollution also means the presence of any foreign substance as impurities, changing the natural, chemical or biological industries of water, and causing damage, corruption or impairment in its quality, which limits its suitability and makes it harmful when used." Water pollution is defined as the introduction of any substance into the water medium by the legislator." (10-03)"It would alter the physical, chemical, and/or biological properties of water, cause the risk of human health blindness, harm wild and aquatic fauna and flora, damage the beauty of sites, or impede any other natural use of water."

The third axis: Water security in Arab countries:

Water security has occupied an important place in economic analyses of the Global South, especially in the water-scarce Arab region, where only 2.5 percent of the world's water resources are freshwater, and only 1 percent of this is easily accessible. The Arab region, which includes 5 percent of the world's population, has less than 1 percent of the world's usable water resources.

Water security is defined as "the ability of all individuals to obtain safe and sufficient water at all times, for a healthy and productive life." It is "the preservation of available water resources, their optimal use, not polluting them, rationalizing their use in drinking, irrigation and industry, and seeking by all means to search for new water sources, develop them and increase their investment capacities."

الشكل 11. الإطار المفاهيمي للأمن المائي في المنطقة العربية



Source: 8th Water and Development Report Water-related Sustainable Development Goals in the Arab Region
Expected changes in water supplies in the Arab region:

A number of studies have been conducted on projected changes in water supply in light of climate change impacts. For example, a revised version of the GLOBWB-PCR hydrological model developed as part of the Future Water study was used to assess present and future water availability, taking into account variations in soil, land cover and topography. The analysis took into account all components and processes of the hydrological cycle, including evaporation, transpiration, groundwater recharge and runoff.

The model results were used to determine the availability of water resources as a result of climatic factors (climate change) and socio-economic factors (agricultural demand). The climate change scenario used was the B1A scenario, which is an intermediate between the low and high greenhouse gas emission scenarios. The B1A scenario assumes the Intergovernmental Panel on Climate Change (IPCC) has considered a rapidly changing world economy, a warming climate, population growth that will peak by mid-century, and the development of new and more efficient technologies. The model projections included an assessment of changes in renewable water resources, and renewable water resources and groundwater recharge are expected to decline throughout the study area, but the largest decline will be in recharge.

This can be explained by the effect of increased evaporation and transpiration and by non-linear hydrological processes. This should be of particular importance for countries with limited rainfall endowments, which depend on groundwater as their main source of water. The table below shows the availability of surface and groundwater resources for the reference period (2000-2009) and the future period (2040-2050) for selected Arab countries based on a study by Future Water.

Table 1. Available renewable water resources including groundwater and surface water for reference years (2000-2009) and projected annual average for the period 2040-2050 (million cubic meters)

	2000- 2009		2040-2050	
	Surface water	Groundwater	Surface water	Groundwater
Algeria	4622	1733	4903	3487
Bahrain	14	16	7	1
Egypt	47470	5.509	50.154	5.879
Iraq	31.643	7.526	25.423	3.521
Jordan	193	67	170	18
Kuwait	306	203	231	183
Lebanon	829	231	869	110
Libya	1.612	2.512	1.117	1.214
Morocco	10.440	3.208	6.899	1.911
Oman	633	101	505	61
Gaza	11	11	11	1
Palastine	50	80	77	8
Qatar	125	116	105	44
Saudi Arabia	7.285	3.687	5.025	1.400
Syria	14.612	376	12.181	2.045
Tunisia	2.059	413	1.800	1.816
United Emirates	169	164	144	55
Yemen	3.777	663	3.780	660
TOTAL	125.871	26.616	113.401	22.414

Source: 8th Water and Development Report Water-related Sustainable Development Goals in the Arab Region

Hydrological modeling results show a significant decrease by 2050 in surface and groundwater in most of the Arab countries studied, compared to reference values. Algeria, Syria and Egypt are excluded from these countries. In Syria, groundwater recharge will increase fivefold, however, total renewable water resources will decrease as flows from the Euphrates River in Iraq are expected to decrease by 17 percent according to the applied methodology.

Surface and groundwater availability is projected to decline by 10 percent and 16 percent, respectively, by 2050 in the 17 Arab countries covered by the study. The total decline in total renewable water resources is estimated at 11 percent over the time period. The study concluded that population growth and economic growth are the main factors in increasing water supply shortages in the study area, but climate change will contribute more than 20 percent of the gap between water supply and water demand. This means that climate change will increase the pressure on already limited water resources with their different uses.

Integrated Water Resources Management:

It is a systematic approach for the purposes of sustainable development and the allocation and monitoring of the status of water resources. The concept and principles of integrated water resources management were formulated during the International Conference on Water and Environment held in Dublin in 1992 and in Chapter 18 of Agenda 21, which is a consensus document issued by the United Nations Environment and Development Organization held in Rio de Janeiro in 1992. (A, 2009)

Integration in water resources planning and management means managing these resources from a comprehensive perspective rather than from a narrow sectoral perspective, so that the process of developing and managing water and land with other related natural resources takes place in a coordinated manner in order to maximize well-being. Integration here takes place on two levels, the integration of the natural system and the integration of the human system: On the first, there is integration between land and water, between fresh and groundwater, both in terms of quantity and quality, between freshwater management and coastal zone management, and between water and freshwater, so that the water basin is the geographical unit on the basis of which integrated planning and management is carried out. As for the human/administrative system, integration aims to take into account the role of water in the various sectors targeted by development due to the multiple uses of water, in drinking, agriculture, industry, urban development, energy generation, transportation, etc. This means that there should be sectoral integration to coordinate water policy with development policies at the national level. Integrated water resources management addresses the balance between demands on water resources from different sectors and the potential impacts of targets on each other, with the aim of forming a coordinated framework for planning and management. ((Region), 2023) This is achieved by considering all levels of management, including transboundary cooperation and upstream and downstream uses as appropriate. Integrated water resources management addresses the balance between the needs of different sectors and stakeholders. Therefore, multi-stakeholder partnerships are a logical element in integrated water resources management that seeks to collaborate in management and problem solving to arrive at the best joint solutions for different actors.

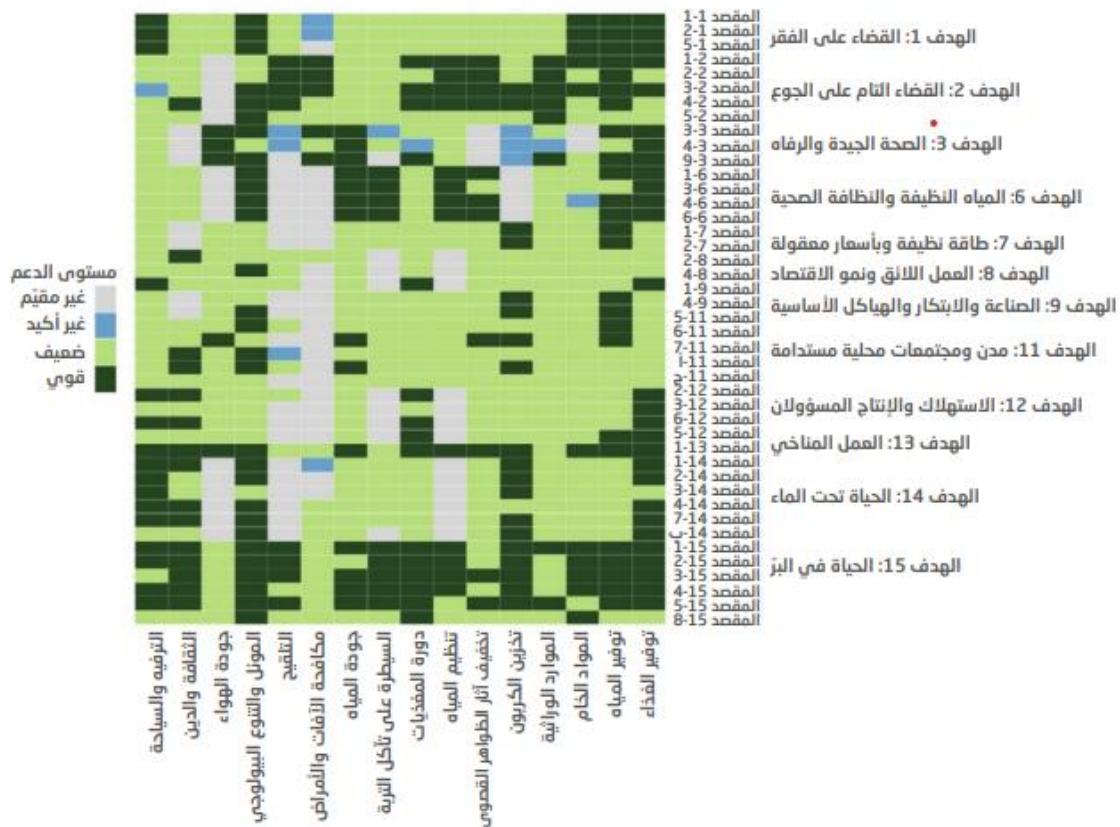
Integrated water resources management requires coordinated management of water, land and vital ecosystems to maximize social and economic benefits, ultimately promoting sound water management. There is no universal approach to implementing integrated water resources management, and each country must adopt its own approach based on its political, social, environmental and economic circumstances. In this context, indicator 1-5-6 allows measuring the degree of implementation of integrated water resources management at the country level. In addition, the human health dimension should be

considered a key element in the implementation of integrated water resources management, Ecosystem-based management in support of integrated water resources management: The implementation of integrated water resources management principles can be complemented by an ecosystem-based management approach. Ecosystem-based management provides a framework for managing public environmental resources by integrating land, water and natural resources objectives for their conservation and sustainable and equitable use. Adopting an integrated approach to water management based on an ecosystem-based management approach would support the integration of sectoral objectives into the integrated water management approach as shown in the table below on the commonalities between the two approaches. Financial resources generated from ecological fees could provide the funds charged for system services needed to implement integrated water resources management. ((Region), 2023)

Table: Commonalities between IWRM and ecosystem-based management

Ecosystem conservation measures	Water resource management gains	Synergies across sectors
Water collection	Groundwater recharge; Regulation of water supply; Water quality control	Adapting to climate change; Increasing food security; Protecting and valuing traditional knowledge
Wetland restoration, conservation and artificial wetlands	Renewable ecosystem to provide clean water services and biological control; Water temperature control.	Healthy ecosystems; Carbon sequestration, biodiversity benefits; Climate control; Recreational benefits.
Reforestation Forest conservation;	Water supply regulation; water purification and biological control	Healthy ecosystems; Carbon sequestration; Improved air quality and climate control; Soil conservation; Recreational and aesthetic value

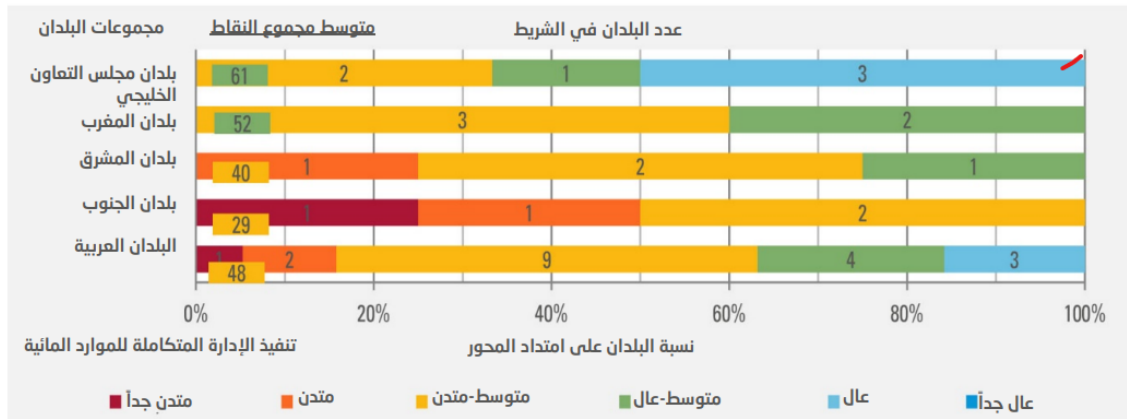
الشكل 4. مساهمة خدمات النظم البيئية في تحقيق مقاصد أهداف التنمية المستدامة



Source: 8th Water and Development Report Water-related Sustainable Development Goals in the Arab Region

Integrated Water Resources Management in Arab Countries: Many Arab countries still face challenges in implementing IWRM, largely due to lack of policy coherence and weak governance structures. For example, an assessment of progress in implementing IWRM in 19 Arab countries shows that none of the Arab countries reported a very high level of implementation, Three countries reported a high level of implementation, meaning that they are working to achieve policy objectives related to IWRM with good geographical coverage and stakeholder participation. Four Arab countries were classified as medium-high IWRM implementation countries, meaning that these countries are generally implementing elements of IWRM. and that they have sufficient capacity to implement these elements in the context of long-term programmes. In contrast, the reports of nine Arab countries showed a low average level of implementation of IWRM, meaning that IWRM elements have taken an institutional form and are on their way to implementation, but need to be strengthened. Three Arab countries recorded a low level of implementation, meaning that they have begun to develop IWRM elements, However, with very limited geographical coverage and stakeholder participation and very low level of implementation of IWRM, work on IWRM elements has not started or stopped. It should be noted that the total score is affected by the inclusion of shared water resources management in the questionnaire for indicator 1-5-6 Since many Arab countries have not signed agreements on shared water resources, their total points on this index will inevitably decrease. ((Region), 2023)

الشكل 8. تنفيذ الإدارة المتكاملة للموارد المائية في مجموعات البلدان العربية



Source: 8th Water and Development Report Water-related Sustainable Development Goals in the Arab Region

As a result, it is expected that two-thirds of the Arab countries covered by the survey will not be able to achieve the world's ambition for indicator 1-5-6 by 2030. Wide disparities have emerged between countries in the Arab region, even between countries with similar social and economic characteristics. Therefore, cooperation and the exchange of experiences and best practices among Arab countries should be encouraged to enhance effective institutional arrangements for integrated water resources management. An intermediate scenario between low and high greenhouse gas emissions scenarios is the B1A scenario, considered by the Intergovernmental Panel on Climate Change.⁸² It assumes rapid global economic growth, population growth peaking by mid-century, and the introduction of new, more efficient technologies.

the state's efforts to ensure environmental protection in Algeria

The protection and preservation of the environment are among the most important features of the new international order, where environmental standards occupy a privileged position in the GATT conventions and European Union charters. Passing these standards has become one of the most important export conditions for many global markets. However, many institutions, especially in developing countries, are still not interested in the environmental management system. Which is a key pillar to increase the efficiency of enterprises, increase their competitiveness By contributing to the elimination of pollution and the development of environmental performance, they will maximize their profitability and maximize their profitability. In addition to reducing costs, it also helps to reduce costs, reducing accident rates, and increasing the efficiency of workers and raising the implementation of ecosystems enhances the enterprise's reputation by enhancing their performance. and increasing its ability to acquire new markets and new consumers, which makes local and government bodies interested in them, which is evident in:

Since independence, Algeria has worked to develop an institutional legal system to regulate transactions for the protection of the environment, as stipulated by the Algerian legislature, among other general legislation.

Protection of the aquatic environment in general national legislation :

- Constitutional protection of the water environment:

With the promulgation of a constitution, the signs of concern for the environment emerged. (The 1963 Constitution of September 10, 1963, Official Gazette No. 64.) , Official Gazette No. 64). In 1976, he referred to the identification of State property and its inclusions, in which water, whether surface or underground in the ground, with all its natural wealth, this public property by placing a duty on everyone to take into account in their daily actions The preservation of public property and the commitment to good work, as well as granting grants, are essential to the preservation of public property.

Power to the National People's Assembly to issue legislation in various fields, especially with regard to the public water system)Article 14 of Order No. 76-97 of November 22, 1976, No. 94 of November 24, 1976)

The 1989 the 1976 Constitution enshrined the power of legislation to the National People's Congress. By including environmental matters in the areas of legislation) Article 115 of the 1989 Constitution. Presidential Decree No. 89-18 (Constitution) so that he could pass legislation on various environmental matters whenever the need arose, and then the promulgated and completed 1996 Constitution, which did not bring anything new regarding contract competence to issue legislation on the public except the protection of the environment except the contract competence to issue legislation on the public. Water system to Parliament. (Article 122 of Presidential Decree No. 96-438.).

- Legal protection of the aquatic environment in general laws

General rules of protection and punitive provisions to deter actions that harm the environment are included in many of the general laws of the Algerian legislature.

- Protection of the aquatic environment within the framework of the Penal Code:

The Algerian Penal Code aims to impose sanctions for violations of the law within the national territory and to safeguard the public assets of the State. As one such asset is the aquatic environment, the Penal Code establishes penalties that are pertinent to the safeguarding of the aquatic environment. Article 87 bis, paragraph 5, of Order No. 66/156 amending and supplementing penalties, Part No. 49The death penalty was imposed in the case of sabotage or terrorism, Criminalizing any act that could introduce or divert substances in various aquatic environments is one of the acts that harm the aquatic environment, Territorial waters would endanger human or animal health or nature. (Article 11 of Law No. 01/19). The protection of the aquatic environment is guaranteed by the Law on the Management of Wastes, which outlines the procedures for the management, control, and treatment of wastes, The valuation and/or removal of wastes in accordance with environmental standards without putting human and animal health at risk.)Article 39 of Law No. 03/10 Depositing, dumping, land filling, submerging or neglecting hazardous private wastes in non-designated locations is a crime, punishable by anywhere from a year to three years in prison.

- Legal protection of the aquatic environment within the framework of the Environmental Protection Law:

The Algerian legislature, within the framework of the Law on Environmental Protection in the Framework of Sustainable Development and the 10_03 of Protected Areas for the Environment in General, abolished article 31 of , which re-classified protected areas and determined the modalities of their impact and protection within the framework of sustainable development. The main requirements for this protection are as follows:(Article 02 of Law No. 11/02.)

Biodiversity :

Air, water, earth, and deserts; The living framework here refers to the field and requirements for the protection of the aquatic environment through the protection of aquatic environments and the protection of aquatic ecosystems from all types of pollution that would affect the quality of water and damage its various uses according to certain requirements based on the identification of the water environment protected and the creation of areas for quality protection.

c. legal protection of the aquatic environment in Private laws

- The protection of the aquatic environment in accordance with the Freshwater Environment Protection Act.

a. Protection of the freshwater environment within the framework of the law related to water:

Proceeding from the new Water Law No. 05/12 amended and supplemented in which The legislator discussed ways to ensure the protection and preservation of water resources under Title III: (New Water Law No. 05/12).

- The scope of quantitative protection for aquifers that are overexploited or threatened by overexploitation:

Within this scope, all works for the replacement or rehabilitation of existing irrigation facilities are subject to the authorization of the Department in charge of water resources. Within this scope, it is prohibited to carry out any new wells or drilling or any change of existing installations that would increase the rotation of extraction; (Article 38 of Law 05/12. op cit) .The purpose of controlling aquatic water was to prevent and reduce the erosion of surface water barriers in the soil and ensure the preservation of their water capacity. The possibilities of granting all kinds of assistance and privilege were approved. The scope of protection is specific, including according to the need to prevent pollution hazards: Direct protection is available where the land belongs to the state and is protected by a natural or legal person entrusted with the exploitation of the structure or structure in question.

The scope of close protection within the areas where discharges or installations that would permanently or suddenly contaminate water are prevented or regulate

the scope of distant protection within the areas where the discharges, activities or structures mentioned above are organized, and an administrative apparatus called the water police was created for there are agents of the department in charge of Water Resources

whose purpose is to ensure the guarantee and protection of water resources from all forms of attacks., but in its penal Nature, (articles 166 to 179 of law 05/12) The provisions of this law provide for the imposition of penalties in the event of violations, represented by raising fines up to 1.000000 DJ and imprisonment from two months to five years‘ (Article 159 of law 05/12).

2- The Freshwater Environment is protected under the Protected Magazines Act.

The identification of types and the attendance of harmful activities are guaranteed by this law. Every municipality gets a protected area designation from the legislature or several municipalities or within the areas of marine public property subject to regulations, especially for the protection of plant animals and land, sea and coastal ecosystems. (Article 02 of Law 11/02.)

This law also gave the administration the power to propose and classify any territory as a protected area and to establish plans for its functioning and supervise its protection, thereby establishing penalties of deprivation of liberty for each person who causes The protected areas included in the penal provisions under Title IV of the same law have deteriorated. (Article 19 of Law 11/02.)

3- The aquatic environment is protected within the framework of maritime law:

Within the framework of the maritime law, the Algerian Legislature has dedicated special protection to the marine environment, and this is what we note through the fifth paragraph, which included the pollution regime, where it is forbidden to pour, submerge and burn in the sea all materials ((Article 210 of Law No. 76/80) that can lead to:

- Damage to public health and biological resources; obstruction of marine activities including navigation the recreational value of the sea is reduced by fishing and spoiling seawater.

The set was adopted by him of special measures for marine pollution, where a special regime was adopted for shipowners for pollution accidents excluding liability, making absolute liability (Article 177 of Law No. 76/80). With regard to reparation for damage caused by fuel pollution, the carrier has relied on some traditional civil liability rules by making it There is a joint liability of the shipowner in the event of a plurality of them. The legislator has established a similar system, within this law rules related to compensation for victims of The imposing of deterrent penalties for violating the provisions of this law, including financial fines.

- The protection of the marine environment within the framework of the law on marine fishing and aquaculture:

The marine fishing and aquaculture sector is receiving special attention in Algeria by redeveloping it and highlighting its economic value that will participate in Economic Development. (. Law No. 15-08 of April 2, 2015) amended and supplemented (Law No. 01-11 of July 3, 2001) on marine fishing and aquaculture to enshrine The legal protection of the aquatic environment included penalties for violating the marine fishing and

aquaculture law, which included penalties for violations of the marine fishing and aquaculture law, which included penalties of imprisonment from three to five years or a fine from 500 thousand dinars to two million (2.000.000 dinars, anyone who intentionally acquires (Article 220 and 221 of Order No.) The fishing vessel uses chemicals or any explosive materials, especially dynamite, poisonous foods or electrocution methods, which weaken, break, damage or infect biological resources and aquatic environments with infection. (Article 83 of Law No 15/08) A fine of 500 thousand dinars to 1,000,000 million dinars shall be imposed on anyone who catches by using a firearm .the legislator has listed within the second chapter of this law the penalties applicable to coral fishing through articles (102 BIS 1 to 102 BIS 7.).

Conclusion:

In recent years, the philosophy of protecting water resources from pollution problems has emerged, which in turn has become a threat to all aspects of life on Earth, which has led to the constant study of the need to find a positive equation for the mutual relationship between man and the environment, this explains the efforts exerted globally such as international standards, environmental conferences, attention to environmental protection, social responsibility and others. And other local ones such as laws, executive decrees, strict legislation, levies, fees, Agreements, the establishment of entities responsible for Environmental Protection, the establishment of the Ocean Environmental Protection Fund and the Ocean Development Fund. The world has recognized the seriousness of environmental problems, so conferences are being held to develop policies and procedures to protect the environment from pollution, especially in light of large industrial activity, so that environmental management is one of the most important procedures adopted and adhered to by active economic institutions in order to develop a clear methodology for dealing with the environment That may be evaluated, reviewed, and enhanced.

Hypothesis testing: Considering the research we conducted and the conclusions we reached:

Hypothesis 01: the state's efforts to protect water resources are still insufficient The result: the state has made several efforts, represented by a number of measures and laws, including the protection of water resources, but this is not enough, and this proves the validity of the first hypothesis.

Hypothesis 02: Algeria has strived with every effort to achieve water Environmental Protection and thus water security. Result: Algeria has strived with every effort to achieve water security and this is proved by the quantity of laws and procedures issued and followed to protect water resources, and this is clearly evident in the abundance and modernity of laws and their diversity.

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Article 02 of Law 11/02.

Article 02 of Law No. 11/02.

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