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Conserving Biodiversity to Achieve Sustainable Development in the Mediterranean Sea

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Abstract

This study examines the serious and increasing threats facing biodiversity in the marine environment as a result of ongoing human activities. It focuses on conservation efforts and the sustainable use of marine resources in a regional and international context in which concern about these risks is growing. The study proceeds from the premise that temporary or isolated efforts are insufficient to address environmental deterioration; rather, concerted international action and cooperation are required. It adopts a descriptive-analytical approach to examine mechanisms designed to protect ecosystems. The study concludes that a long-term action plan is needed to conserve biodiversity in the Mediterranean Sea, protect water resources and advance the Sustainable Development Goals.

Keywords: biodiversity; sustainable development; marine environment; Mediterranean Sea; human activities.

Résumé:

Cette étude examine les menaces graves et croissantes qui pèsent sur la biodiversité dans l'environnement marin en raison des activités humaines continues. Elle se concentre sur les efforts de conservation et l'utilisation durable des ressources marines dans un contexte régional et international où l'inquiétude face à ces risques grandit. L'étude part du principe que des efforts temporaires ou isolés sont insuffisants pour faire face à la détérioration de l'environnement ; une action et une coopération internationales concertées sont plutôt requises. Elle adopte une approche descriptive et analytique pour examiner les mécanismes conçus pour protéger les écosystèmes. L'étude conclut qu'un plan d'action à long terme est nécessaire pour conserver la biodiversité en mer Méditerranée, protéger les ressources en eau et faire progresser les objectifs de développement durable.

Mots-clés : biodiversité ; développement durable ; environnement marin ; mer Méditerranée ; activités humaines.

Introduction:

Marine life constitutes an immense source of environmental wealth, providing food, medicines and raw materials. More fundamentally, marine life helps shape the nature of our planet. Human maritime activities have contributed to the deterioration of coastal zones and the marine environment, giving rise to numerous environmental concerns. These developments have made it necessary to protect the marine environment and use its resources responsibly; otherwise, environmental destruction and loss could ultimately threaten human life on this planet, given that oceans cover approximately 71% of the Earth's surface.

As economic activity along the Mediterranean coast has intensified to meet the needs of growing populations, many species of marine organisms have become extinct or endangered. Biodiversity plays a vital role in marine ecosystems and is one of the foundations of sustainable development. Environmental degradation threatens every dimension of human well-being, including health and the incidence of disease, including cancer.

The international community has recognized the need for swift and effective action to save the marine environment, particularly the Mediterranean Sea, and to halt the serious threat to marine biodiversity. International agreements have therefore been adopted to protect the marine environment and preserve its vitality for future generations. Algeria has followed this path by ratifying or acceding to such agreements and incorporating environmental protection into domestic law in order to conserve biodiversity threatened with extinction.

The importance of this subject lies in protecting the Mediterranean marine environment from the various risks that threaten its biodiversity. This concern has led the Algerian legislator to establish a national framework for preventing harm to and protecting the marine environment. The central research question is therefore: What measures has Algeria put in place to protect biodiversity in the marine environment, and to what extent have these mechanisms contributed to sustainable development? To answer this question, the study is organized as follows:

- **Chapter One:** Biodiversity in the Marine Environment of the Mediterranean Sea: Conceptual Framework.
- **Section One:** The Meaning of Biodiversity in the Marine Environment.
- **Section Two:** Risks Threatening the Marine Environment.
- **Chapter Two:** Conserving Biodiversity in the Mediterranean Sea to Achieve Sustainable Development: An Action Plan.
- **Section One:** International Agreements Ratified by Algeria to Protect the Marine Environment.
- **Section Two:** The National Plan for Protecting the Marine Environment.

Chapter One: Biodiversity in the Marine Environment of the Mediterranean Sea — Conceptual Framework

The marine environment is a major component of the biosphere and a vast reservoir of marine organisms and plant life. However, these organisms are increasingly threatened by overfishing, economic activities, marine pollution and climate change. The international community has come to recognize the scale of the danger and the need for intervention, including institutional and legal mechanisms to safeguard this natural heritage for future generations. This chapter therefore explains the meaning of biodiversity in the marine environment in Section One and the risks threatening the marine environment in Section Two.

Section One: The Meaning of Biodiversity in the Marine Environment

Biodiversity is a global asset of immense value to present and future generations, and the sea contains extraordinarily rich biodiversity. Some human activities, however, place this wealth under sustained pressure and may cause its gradual degradation and eventual loss. This section clarifies the concept of biodiversity, followed by the concept of the marine environment, in order to establish how marine biodiversity can be conserved despite the threats it faces.

Subsection One: The Concept of Biodiversity

At first glance, the term “biodiversity” may appear relatively recent, and it has become widely used in recent decades. This subsection first defines the term and then explains its significance.

First: Definition of Biodiversity

The term emerged in the United States in the early 1980s, but did not become widely established until 1992, when the Earth Summit was held in Rio de Janeiro, Brazil, on 5 June. The Convention on Biological Diversity, a multilateral treaty, was concluded at that time and entered into force on 29 December 1993. The concept is therefore relatively recent.[1]

Article 2 of the Convention defines “biological diversity” as “the variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.” Biodiversity therefore encompasses all plant and animal species, their genetic resources and the ecosystems to which they belong. It is consequently fundamental to human life, livelihoods and culture on Earth.

Second: The Importance of Biodiversity

Biodiversity plays an essential role in sustaining the lives of more than 6.7 billion people worldwide. It includes many forms of renewable natural capital on which livelihoods and development depend; in other words, it comprises the diversity of life on Earth. Biodiversity has evolved over the past 3.8 billion years.

Although the Mediterranean Basin is rich in biodiversity, with approximately 15,000 to 25,000 plant species, 60% of which are unique to the region, it faces serious threats. According to the International Union for Conservation of Nature’s 2008 assessment, 19% of animal species were threatened with extinction, and at least 16 species had disappeared without replacement. These figures are reproduced as reported in the source manuscript.

Despite the urgent need to conserve biodiversity more effectively and use it sustainably, losses continue under a range of pressures. The parties concerned must therefore take all appropriate measures to protect and conserve biodiversity and rare or fragile ecosystems that are at risk of extinction.

Having explained the concept and importance of biodiversity, the next subsection addresses the concept of the marine environment. This completes the conceptual discussion of biodiversity in the Mediterranean marine environment before the study turns to an action plan for its conservation.

Subsection Two: The Concept of the Marine Environment

The marine environment plays an important role in human life and has become a subject of growing national and international concern. Before discussing the risks that threaten it, this subsection defines the marine environment and then considers its importance.

First: The Technical Definition of the Marine Environment

The term “marine environment” is relatively recent in international legal scholarship. The traditional concept of the sea remained dominant until the subject was addressed during the seventh session of the United Nations Conference on the Law of the Sea. Under the 1982 United Nations Convention on the Law of the Sea, the marine environment may be understood as an ecosystem, or a group of ecosystems, in the contemporary scientific sense: a defined unit in time and space, comprising living

organisms, physical and climatic conditions, interactions among organisms, and relationships between those organisms and their surrounding physical environment.

Second: The Importance of the Marine Environment

The marine environment is essential to maintaining the ecological systems on which human life depends. Its importance takes several forms, which can be summarized as follows.

1. Ecological Importance

The marine environment is dynamic because its components are naturally and freely connected, allowing interaction across different areas. It plays a prominent role in climate regulation. The thermal properties of seawater make the sea function like a heat engine that regulates the Earth's temperature: surface waters absorb substantial solar radiation, while temperature differences within the water column and evaporation transfer moisture into the atmosphere. Winds carry this moisture, clouds form, and precipitation over land replenishes the freshwater on which terrestrial organisms depend.

The sea also absorbs carbon dioxide through photosynthesis by large quantities of suspended marine phytoplankton. Carbon is incorporated into organic matter, while oxygen is released and dissolves in the water, supporting the respiration of other marine organisms. Ocean currents, including the movement of cold waters from polar regions, also affect the sea's capacity to absorb carbon dioxide. These processes underscore the marine environment's role in reducing atmospheric carbon dioxide, whose increase poses serious risks to people and the environment.

2. Strategic Importance

The sea is a strategic space to which states continually devote attention. It enables them to protect their interests and keep potential adversaries as far as possible from their land borders; it is also a political instrument through which states can demonstrate power internationally. In addition, more than 80% of global trade is reported to be carried by sea. Seas and oceans are therefore central to navigation, movement and commerce, providing major transport routes for passengers and goods through large vessels capable of carrying heavy loads over long distances.

The sea is also important for tourism development. Coastal areas and beaches attract visitors seeking recreation and tourism, thereby contributing to the local economies of countries with coastlines.

In addition to its ecological and strategic significance, the marine environment has substantial economic value, as discussed below.

3. Economic Importance

A source of food. The marine environment supplies food for humans and other organisms. It contains large quantities of diverse marine life with high nutritional value, particularly fish. The source manuscript also invokes the Qur'anic verse: "And it is He who subjected the sea for you to eat from it tender meat and to extract from it ornaments which you wear; and you see the ships ploughing through it, and that you may seek of His bounty, and perhaps you will be grateful."

The economic significance of the marine environment is also reflected in the considerable increase in fishing activity from year to year, particularly in developing countries.

A source of important industries. Marine environments provide many oils used in the manufacture of fats, as well as raw materials for numerous industries, including pharmaceuticals and cosmetics. Some fish are processed into fishmeal or used as animal feed.

A transportation route. Despite advances in air transport and other modes of transport, maritime transport remains an important and beneficial means of global transportation. This is reflected in the substantial growth and technical development of shipbuilding.

A source of energy. The marine environment contains large quantities of oil and natural gas, as well as resources such as gold, tin, diamonds, gravel and sand, whose value is described in the source manuscript as amounting to billions of dollars annually.

A source of other mineral resources and freshwater. The salts dissolved in seawater are estimated in the source manuscript at approximately 166 million tonnes per cubic mile of seawater, with sodium chloride accounting for 85% of total dissolved salts. The sea also contributes to freshwater availability through evaporation and rainfall. Desalination has enabled many countries to address shortages of freshwater resources.

Section Two: Risks Threatening the Marine Environment

As noted above, biodiversity plays a vital role in providing many of the biological resources that people need in everyday life. Nevertheless, various factors have caused a decline in the ecosystems and ecosystem services provided by the Mediterranean Sea, with adverse implications for sustainable development. This section examines pollution threatening the marine environment, followed by climate change.

Subsection One: Pollution Threatening the Marine Environment

Persistent pollution damages coastal and marine ecosystems and endangers the livelihoods of entire communities. Article 1(4) of the 1982 United Nations Convention on the Law of the Sea defines pollution of the marine environment as the introduction by humans, directly or indirectly, of substances or energy into the marine environment, including estuaries, where this results or is likely to result in harmful effects such as damage to living resources and marine life, risks to human health, and interference with marine activities, including fishing and other legitimate uses of the sea.[2] In this sense, marine pollution threatens biodiversity through several pathways, the main forms of which include:

- Pollution from land-based sources.
- Oil pollution.
- Pollution resulting from activities associated with the seabed.
- Nuclear or radioactive pollution.
- Overexploitation of the marine environment.

Subsection Two: Climate Change

International studies and research indicate that global warming is having increasingly visible effects on seas, oceans and marine life in different parts of the world. For example, rising atmospheric carbon dioxide concentrations increase acidity in seas and oceans and reduce calcium availability in the water. This poses a serious threat to organisms that build shells, including corals and mussels. The resulting impacts may undermine the foundations of biodiversity at an alarming rate.

Current scientific understanding points to three major factors placing pressure on biodiversity: rising water temperatures, sea-level rise and ocean acidification. These changes can have serious consequences for marine life in different ways. One example is the spread along the Algerian coast—at Béni Saf, Aïn Benian and Sidi Fredj—of the invasive alga known as Caulerpa racemosa. It may threaten fishery resources and human health through the transfer of toxins along the food chain, including through the consumption of fish and shellfish.

Chapter Two: Conserving Biodiversity in the Mediterranean Sea to Achieve Sustainable Development — An Action Plan

The Mediterranean region is rich in exceptional and distinctive biodiversity. However, this richness is threatened by human activity and climate change. Given the sensitivity of the issue, the risk of loss and degradation of the marine environment, and increasing international awareness of its importance as a living resource, it is necessary to adopt measures that advance planned objectives for biodiversity conservation and long-term sustainable development.

This chapter first considers the role of international agreements ratified by Algeria in protecting the marine environment and then examines the national plan for marine environmental protection, with a view to supporting sustainable development.

Section One: International Agreements Ratified by Algeria to Protect the Marine Environment

As many marine species in the Mediterranean face the risk of extinction, the international community has needed to develop legal mechanisms to protect the marine environment over the long term and preserve its ecological heritage for future generations. This section addresses the Mediterranean Action Plan and cooperation and partnerships among different stakeholders.

Subsection One: The Mediterranean Action Plan

The first Mediterranean Action Plan was established in 1975 within the United Nations Environment Programme's Regional Seas Programme. The source manuscript places this development against the background of earlier international initiatives, including the 1954 London Convention on the Prevention of Marine Pollution by Oil and the United Nations environmental programme following the 1972 Stockholm Conference.[3]

The 1974 action-plan model became a model for other regional seas action plans administered by UNEP around the world. It also provided an effective framework for negotiating and adopting the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, known as the Barcelona Convention, together with its protocols. The source manuscript states that the contracting parties comprised 21 Mediterranean countries and the European Union.[4]

The Barcelona Convention provides an institutional and legal framework for protecting the marine and coastal environment and ensuring the sustainable use of Mediterranean resources. Its associated implementation framework enables the contracting parties to act jointly towards a healthy Mediterranean Sea and coastline that support sustainable development in the region. The Convention is supplemented by seven protocols, each addressing particular aspects of protecting the Mediterranean environment.

Consistent with these objectives and the need to ensure the sustainable development of Mediterranean biodiversity, UNEP provides a coordinating unit to promote and implement the Barcelona Convention and its protocols through international and regional programmes. A number of centres have been established to protect the Mediterranean marine environment from threats that could lead to the disappearance of marine and animal species, and to support their conservation and sustainable management. Each centre has its own responsibilities and areas of competence.

Subsection Two: Cooperation and Partnerships among Stakeholders

The Mediterranean Action Plan works to protect the marine environment and promote sustainable development through cooperation and partnerships with numerous organizations, most notably the United Nations, which has devoted attention to the protection of marine biodiversity. United Nations bodies have convened major conferences, including the Third United Nations Conference on the Law of the Sea in 1982 and the United Nations Conference on Environment and Development, which the source manuscript dates to 1996. The United Nations General Assembly also adopted the World Charter for Nature on 24 October 1982, emphasizing the need to conserve natural resources, avoid waste, and protect marine organisms and ecosystems.[5] In addition, the United Nations Environment Programme was established in 1972 under General Assembly Resolution 2997 to support international efforts to protect the environment and biodiversity.[6]

International specialized agencies have also contributed to protecting the marine environment and supporting sustainable development. These include the United Nations Educational, Scientific and Cultural Organization (UNESCO), established in 1945, and the Food and Agriculture Organization of the United Nations (FAO), also established in 1945.

Civil society has played an increasingly important role since the Mediterranean Action Plan was launched. The contracting parties have recognized that public awareness and support from civil society are valuable to protecting the Mediterranean marine and coastal environment and advancing sustainable development. This cooperation has led to non-governmental organizations being granted observer status, encouraging them to participate in meetings and activities under the Mediterranean Action Plan and contribute to the objectives established by the Barcelona Convention and its protocols. Many also participate on an equal footing with contracting parties in the Mediterranean Commission on Sustainable Development. The Plan also provides assistance to partners in developing Mediterranean countries to strengthen their capacities.

Section Two: The National Plan for Protecting the Marine Environment

Algeria has a Mediterranean coastline extending approximately 1,644 kilometres. Like other countries, it faces marine pollution and threats to biodiversity. To protect its marine environment from pollution and biodiversity loss, the Algerian legislator has established legal and institutional frameworks intended to support sustainable development in the Mediterranean and preserve natural resources for future generations. These frameworks include specialized bodies and the activation of legal and institutional mechanisms.

Subsection One: Bodies Responsible for Protecting the Marine Environment

In response to serious threats affecting marine organisms and plants, Algeria has established central and local bodies under the ministry responsible for land-use planning and the environment. Their mission is to protect the marine environment against harmful impacts and threats to marine life. The main bodies are described below.

Central Bodies

The Algerian state has established several central bodies concerned with protecting the Mediterranean marine environment. Among the principal bodies are the following.

Ministry responsible for Land-Use Planning and the Environment. This ministry developed through several stages. Initial steps included the establishment of the National Council for the Environment in 1974, followed by the creation of the Directorate-General for the Environment in 1994 and the State Secretariat for the Environment in 1996. In 2001, a Ministry for Land-Use Planning and the Environment was established to protect the environment against various risks. Article 2, as cited in the source manuscript, assigns it a number of responsibilities, including:

- Preventing all forms of pollution and damage in industrial and urban environments.
- Preventing all forms of degradation in the natural environment.
- Conserving biodiversity.

Other responsibilities are also assigned to the Ministry.

National Coastal Commission. This body was established under Law No. 02-02 on the Protection and Enhancement of the Coast. It is a public body responsible for ensuring implementation of national policy for the protection and enhancement of the coast in general and coastal zones in particular, as described in Article 24 of that law. Its main powers include the following.[7]

- Inventorying coastal areas through a comprehensive information programme that monitors changes along the coast and produces a report on its condition every two years, as set out in Articles 24 and 25.
- Conducting regular analyses of bathing water in accordance with applicable regulations and informing users on an ongoing and periodic basis, as set out in Article27.
- Establishing a coastal coordination council in sensitive coastal areas or areas exposed to particular environmental risks, in order to mobilize the necessary resources, as provided for in Article 34.

National Observatory for the Environment and Sustainable Development. This is a public institution of an industrial and commercial nature, with legal personality and financial autonomy. Its duties, as outlined in Article 5 of the relevant instrument cited in the source manuscript, include:[8]

- Establishing and operating networks to monitor and measure pollution and oversee natural environments.
- Collecting environmental and sustainable-development data and information from national institutions and specialized bodies.
- Processing environmental data and information to produce information tools.
- Initiating or participating in studies that improve knowledge of the environment and the pressures exerted on it.
- Publishing and disseminating environmental information.

Higher Institute of Bou Ismaïl. The Institute's principal role is to train port-control officers. However, its students have also conducted specialized studies in oceanography and marine pollution, which are retained in the Institute's library for use in protecting the marine environment from pollution.

National Institute of Marine Sciences and Coastal Development. This Institute conducts studies concerning the marine environment, particularly marine pollution.

Other central bodies include the ministries responsible for health and population, tourism, and higher education and scientific research. Having briefly described the principal central bodies involved in protecting the marine environment from pollution, the discussion now turns to local bodies and their role in environmental protection and sustainable development.

Local Bodies

Local authorities play a key role in environmental protection and sustainable development because they implement and give effect to environmental rules. Article 15 of the Constitution, as quoted in the source manuscript, identifies the wilaya (province) and the municipality as the territorial authorities of the state and describes the municipality as the basic local authority. The roles of the wilaya and municipality are discussed below.

First: The Role of the Wilaya in Protecting the Marine Environment

The 1990 law governing the wilaya was the first law identified in the source manuscript as protecting the environment. Article 66 granted the wilaya broad powers in this field. A local environmental inspectorate was subsequently established at wilaya level, operating in coordination with the decision establishing the Sea Pollution Committee, as described in Article 6 of that decision. Under the same instrument, the wali (governor) chairs the committee at the regional level alongside several departmental directors, as specified in Article 2.

The committee meets twice a year and may also convene extraordinary sessions, as provided for in Article 4. It has several functions related to marine environmental protection under Articles 3 and 7 of the same decision. The wilaya environmental inspectorate primarily monitors compliance with environmental protection laws and proposes measures to prevent environmental degradation and combat pollution.

Second: The Role of the Municipality in Protecting the Marine Environment

Articles 1 and 2 of the Municipal Law define the municipality, respectively, as the basic territorial authority of the state, endowed with legal personality and financial autonomy and established by law, and as the territorial basis of decentralization, a place where citizenship is exercised and a framework for citizen participation in the management of public affairs. Article 31 provides for several municipal committees, including:

- The Committee on Health, Hygiene and Environmental Protection.
- The Committee on Land-Use Planning, Urban Development, Tourism and Traditional Industries.
- The Committee on Irrigation, Agriculture and Maritime Fisheries.

Articles 107–112 and Article 123 also address pollution control, environmental protection, wastewater treatment and solid waste. These provisions illustrate the municipality's role in environmental protection.

A review of Algerian legislation shows that the 1969 Municipal Law did not originally address environmental issues. The first environmental protection body was established in 1974, followed by an executive decree in 1981. In 1984, a decree was issued governing cleaning and the collection and transport of waste to designated sites. Law No. 01-19 on Waste Management later required municipalities to inform and raise citizens' awareness of waste-related risks.[9] This law forms a basic part of the legal framework defining municipal powers in public cleanliness and its improvement. The source manuscript highlights two relevant principles:

- Protecting human and animal health without damaging water resources or air quality, and avoiding visual pollution.
- Citizens should cooperate in waste management by observing the system established by the municipality.

Subsection Two: Promoting Sustainable Development to Protect Algeria's Marine Environment

Like other countries, Algeria seeks to confront the risks facing the marine environment and promote ecological development in the Mediterranean. It has pursued this aim by incorporating sustainable development into domestic legal and institutional mechanisms. This subsection considers sustainable development as a new dimension of marine environmental protection and then reviews results reported in connection with its implementation.

First: Sustainable Development as a New Dimension of Marine Environmental Protection in Algeria

The Algerian government has developed a national environmental strategy intended to support sustainable development in the Mediterranean. The strategy has been translated into legal and institutional measures with the aim of changing inherited approaches to environmental issues. The main elements are discussed below.

Basic and Specialized Legislation for Environmental Protection within the Framework of Sustainable Development

Basic environmental legislation. This legislation is based on the international community's fundamental principles on environmental protection and sustainable development. Environmental protection within this framework aims to promote rational ecological use of available natural resources, adopt cleaner technologies, restore damaged conditions, advance national sustainable development, improve living and working conditions, and ensure a healthy environment.[10]

Specialized environmental legislation. In addition to the general law on environmental protection within the framework of sustainable development, the Algerian legislator has adopted specialized laws in several fields relevant to environmental protection and sustainable development. The principal examples described in the source manuscript are as follows.

Legislation on protected areas within the framework of sustainable development. This law defines protected areas in Article 2, classifies them into seven categories in Article 4, provides for their sustainable management in Articles 34–37, and establishes a National Protected Areas Commission in Article 17.

Legislation on land-use planning and sustainable development. This legislation seeks to promote a balanced distribution of activities and territories by reducing pressure on the coast, conurbations and major cities, while promoting mountain regions, the High Plateaus and the South. It also promotes the rational use and conservation of heritage, natural and cultural resources for future generations, as set out in Article 4. The policy is implemented through plans referred to in Articles 7, 8 and 9.[11]

Legislation on the prevention of major risks and disaster management within the framework of sustainable development. This legislation establishes rules for preventing major risks in order to protect the environment and preserve the heritage of future generations. It incorporates the principle of prevention in response to major disasters around the world. Article 2 defines major risks as any potential threat to people and their environment that may arise from exceptional natural hazards and/or human activities; Article 10 lists the risks covered by the law. The Mediterranean coastline also experiences intensive maritime traffic, which increases the vulnerability of coastal environments because of deliberate discharges from ships and maritime accidents.[12]

Legislation on sustainable tourism development. Article 3 defines sustainable development as a form of development in which choices and opportunities preserve the environment, natural resources and cultural heritage for future generations. Since tourism is an integral part of national land-use planning and sustainable-development policy, tourism facilities are expected to comply with the standards contained in the relevant planning legislation. To implement sustainable development in tourism, the legislator adopted two additional laws: one establishing general rules governing the use and operation of beaches for tourism, and another addressing tourism expansion zones and sites. The source manuscript does not provide their numbers in this passage.[13]

Investment-development legislation. Article 6 of the relevant law grants investors freedom to undertake investments subject to compliance with environmental protection regulations. It also refers to investments of particular importance to the national economy, especially technological investments that can protect the environment and natural resources, save energy and promote sustainable development, as provided in Article 10. The law provides incentives for environmental protection and sustainable development, while Article 76 of Law No. 03-10 also addresses this objective.[14]

This summarizes the principal legislative measures described in the source manuscript as intended to protect the environment and support sustainable development for future generations. The discussion now turns to the specialized institutions established for environmental protection and sustainable development.

Specialized Institutions for Environmental Protection and Sustainable Development

The Algerian legislator has established environmental institutions in line with national policy to protect the marine environment and promote sustainable development for future generations. These institutions include forward-looking bodies and specialized bodies, discussed below.

Forward-Looking Institutions within the Framework of Sustainable Development

These institutions are responsible for setting strategies, developing plans and adapting them to changes in economic, social and environmental conditions. Their forward-looking role is intended to prevent arbitrary or ad hoc treatment of environmental issues, which is an important factor in the success of sustainable development.

Higher Council for the Environment and Sustainable Development. Article 2 of the relevant decree, as described in the source manuscript, assigns the Council the following responsibilities:[15]

- Determining major national strategic choices for environmental protection and the promotion of sustainable development.
- Regularly assessing the state of the environment.
- Monitoring the implementation of legislative and regulatory provisions on environmental protection and deciding on appropriate measures.

- Following developments in international environmental policy and encouraging the relevant state bodies to conduct forward-looking studies to inform its deliberations.
- Considering major environmental issues submitted to it by the minister responsible for the environment.
- Submitting an annual report to the President of the Republic on the state of the environment and assessing implementation of its decisions.

The Council carries out its duties with the assistance of permanent technical committees and special committees composed of representatives of the relevant ministries, as provided in Article 3 of the same instrument.

National Council for Land-Use Planning and Sustainable Development. This Council was established under Article 21 of Law No. 01-20. The article lists several of its functions, including:[16]

- Proposing periodic evaluation and updating of the National Land-Use Planning Scheme.
- Contributing to the preparation of national and regional master plans.
- Submitting an annual report on implementation of the National Land-Use Planning Scheme to both chambers of Parliament.

The Council's composition, powers and operating procedures are to be determined by regulation. An executive decree issued in 2005 further addressed the provision by assigning the Council a consultative and participatory role in preparing various land-use plans for sustainable development. It also added forward-looking responsibilities relating to the overall land-use strategy and the planning and rehabilitation of sensitive areas such as the steppe, the South, mountains and coastal regions.

Observatories. The source manuscript describes two national observatories responsible for collecting and processing environmental information.

National Observatory for the Environment and Sustainable Development. Established in April 2002, this is a national public institution of an industrial and commercial nature under the supervision of the minister responsible for the environment. It collects environmental information at scientific, technical and statistical levels, processes it, prepares it and disseminates it, as described in Articles 1–4 of the relevant instrument. Article 5 lists its duties, and regional laboratories, stations and monitoring networks assist it in carrying out those duties under Article 6.[17]

National Observatory for the Promotion of Renewable Energies within the Framework of Sustainable Development. The source manuscript states that this observatory was established under Article 17 of Executive Decree No. 02-115 on land-use planning and sustainable development. Its role is to promote renewable energies derived from solar radiation, wind power, geothermal heat, organic waste, hydropower, biomass technologies and other sources. Such energy is presented as an alternative to conventional energy sources and as a means of preserving resources for future generations. Article 7 is cited in this regard.[18] Its principal objectives include:

- Protecting the environment by encouraging the use of non-polluting energy sources.
- Contributing to sustainable development by conserving conventional energy resources.
- Contributing to national land-use planning by promoting renewable energy sources and extending their use.

Second: Results Reported in Connection with the Implementation of Sustainable Development

To protect the marine environment, the Algerian government has sought to establish legal and institutional mechanisms for conserving ecological diversity against threats and preserving it for future generations. One manifestation of these efforts is the blue economy policy. Given increasing competition to exploit resources on the seabed, it is necessary to use marine wealth rationally and responsibly and to prevent human activities from placing it at risk. The blue economy policy is discussed below.

The Blue Economy Policy in Algeria

The blue economy is an initiative for achieving sustainable development. It refers to a circular economy that avoids marine pollution, uses resources efficiently, and relies on sustainable production and consumption methods. This policy was discussed at a conference held in Algeria on 3–4 December 2018, which aimed to develop a policy integrating all marine-related dimensions within a unified vision. Its implementation takes account of political and financial circumstances, partnerships and human resources.

In this context, Algeria delimited its maritime boundary with the Republic of Tunisia through a bilateral agreement dated 11 July 2011, which the source manuscript states was approved by Presidential Decree No. 13-316. [19] Algeria also approved Presidential Decree No. 18-96, thereby extending the area over which it exercises control over marine resources and the maritime areas available for investment within its exclusive economic zone.[20]

In recent years, new economic activities have appeared along the Mediterranean coast in addition to traditional maritime activities. These include aquaculture, wind-energy exploitation and other forms of renewable marine energy. Such activities are directly or indirectly connected to the blue economy. Algeria's national strategy for integrated coastal-zone management also promotes sustainable marine activities by diversifying and developing them, and has proposed a national marine spatial plan to coordinate resources and prevent overlapping instruments.

Assessing Algeria's Potential in the Blue Economy

An analysis conducted in 2018 of the blue-economy potential of countries in the Western Mediterranean indicated that Algeria had made considerable efforts in several blue-economy sectors, but that their management required adaptation. The sectors identified were fisheries, maritime transport and seawater desalination. Measures are therefore needed to address existing challenges and conserve the fragile marine and coastal ecosystems of the Mediterranean.

Conclusion:

This study indicates that the marine environment is an important source of biodiversity that supports human life. However, the Mediterranean marine environment is subjected to irrational exploitation that threatens its integrity. It has consequently become a focus of international concern, and research efforts have sought to raise intellectual and public awareness of the need to conserve this wealth and pass it on to future generations.

Conserving biodiversity in the Mediterranean to achieve sustainable development is now a shared responsibility, particularly for the Algerian government because of the length of Algeria's Mediterranean coastline and its exposure to environmental pressures. Algeria's environmental policy has therefore used legal and institutional mechanisms to seek effective ways of preserving this natural heritage, supporting sustainable development and transmitting it to future generations.

Despite international and national efforts to protect the environment, promote sustainable development and implement the blue economy policy, the measures described remain partial and have not yet produced a comprehensive, well-calibrated response to the dangers facing the marine environment. To address these risks, the study proposes the following recommendations:

1. Identify appropriate solutions promptly by reviewing legal texts so that they respond to the evolving risks facing the Mediterranean marine environment.
2. Ensure the strict and effective enforcement of legal provisions, free from considerations that undermine compliance and obstruct sustainable development.
3. Adopt economic and fiscal incentive policies and encourage the use of environmentally clean technologies.
4. Strengthen public participation and raise awareness of the importance of biodiversity, its conservation and its transmission to future generations.
5. Establish international environmental courts with jurisdiction over violations affecting the marine environment.

Research Prospects:

Future research could examine the practical effectiveness of Algeria's legal and institutional mechanisms for protecting marine biodiversity through comparative legal analysis and field-based assessment. Particular attention should be given to the implementation of environmental legislation, the coordination of institutions responsible for marine protection, and the availability and reliability of environmental monitoring data. Further studies could also assess the economic and environmental sustainability of Algeria's blue economy sectors, including fisheries, aquaculture, maritime transport, seawater desalination and marine renewable energy. Comparative research involving other Mediterranean countries could help identify effective governance practices and strengthen regional cooperation. Finally, interdisciplinary studies combining law, environmental science, economics and public policy could provide evidence-based recommendations for improving marine biodiversity conservation and achieving the Sustainable Development Goals.

References:

I. International Agreements and Treaties

1. Convention on Biological Diversity. Convention on Biological Diversity. Adopted in Rio de Janeiro on 5 June 1992, Article 2. Entered into force on 29 December 1993.
2. United Nations. United Nations Convention on the Law of the Sea. 10 December 1982, Article 1(4).
3. United Nations Environment Programme (UNEP). Mediterranean Action Plan. Established in 1975 under the UNEP Regional Seas Programme.
4. United Nations Environment Programme (UNEP). Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention), together with its protocols.
5. United Nations General Assembly. World Charter for Nature. Adopted on 24 October 1982.
6. United Nations General Assembly. Resolution 2997 (XXVII): Institutional and Financial Arrangements for International Environmental Co-operation. 15 December 1972.

II. National Algerian Legislation

7. Algeria. Law No. 02-02 on the Protection and Enhancement of the Coast. Articles 24, 25, 27 and 34.
8. Algeria. Law No. 01-19 on Waste Management, Control and Disposal.

9. Algeria. Law No. 03-10 of 19 July 2003 on the Protection of the Environment within the Framework of Sustainable Development.

10. Algeria. Law No. 01-20 on Land-Use Planning and Sustainable Development. Article 21.

11. Algeria. Legislation on the Prevention of Major Risks and Disaster Management within the Framework of Sustainable Development. Full legal citation not specified in the source material.

12. Algeria. Legislation on Sustainable Tourism Development and the General Rules Governing the Use and Operation of Beaches. Law numbers not specified in the source material.

13. Algeria. Investment Legislation. Articles 6 and 10; the exact law number and date are not specified in the source material.

14. Algeria. Executive Decree No. 02-115. Article 17, concerning the National Observatory for the Promotion of Renewable Energies within the Framework of Sustainable Development.

15. Algeria. Presidential Decree No. 13-316, approving the bilateral agreement between Algeria and Tunisia on maritime boundary delimitation, dated 11 July 2011.

16. Algeria. Presidential Decree No. 18-96, concerning Algeria's exclusive economic zone and the use of marine resources.

17. Algeria. Regulatory Framework Governing the National Observatory for the Environment and Sustainable Development. Articles 1–6; the full title, number and date are not specified in the source material.

18. Algeria. Decree Governing the Higher Council for the Environment and Sustainable Development. Article 2; the decree number and date are not specified in the source material.

Notes

[1] -Convention on Biological Diversity, adopted in Rio de Janeiro on 5 June 1992, Article 2; the source manuscript states that it entered into force on 29 December 1993.

[2] -United Nations Convention on the Law of the Sea (1982), Article 1(4), as cited in the source manuscript for the definition of marine pollution.

[3] -Mediterranean Action Plan, established in 1975 within the United Nations Environment Programme's Regional Seas Programme, as described in the source manuscript.

[4] -Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention), together with its protocols, as described in the source manuscript.

[5] -United Nations General Assembly, World Charter for Nature, adopted on 24 October 1982, as referenced in the source manuscript.

[6] United Nations Environment Programme (UNEP), established in 1972 under United Nations General Assembly Resolution 2997, as cited in the source manuscript in relation to international environmental protection efforts.

[7] -Algerian Law No. 02-02 on the Protection and Enhancement of the Coast, cited in the source manuscript, including Articles 24, 25, 27 and 34.

[8] -The source manuscript refers to the National Observatory for the Environment and Sustainable Development and describes its status and functions under the relevant executive regulatory framework, without giving the full decree citation in that passage.

[9] -Algerian Law No. 01-19 on Waste Management, Control and Disposal, cited in the source manuscript in relation to municipal responsibilities for waste awareness and management.

[10] -Algerian Law No. 03-10 of 19 July 2003 on the Protection of the Environment within the Framework of Sustainable Development, as cited in the source manuscript.

[11] -Algerian Law No. 01-20 on Land-Use Planning and Sustainable Development, cited in the source manuscript in connection with national and regional planning.

[12] -Algerian legislation on the Prevention of Major Risks and Disaster Management within the Framework of Sustainable Development, as described in the source manuscript. The manuscript does not supply a complete legal citation in the relevant passage.

[13] -The source manuscript refers to Algerian legislation on sustainable tourism development and the general rules governing the use and operation of beaches, but does not supply the laws' numbers in the relevant passage.

[14] -The source manuscript refers to Algerian investment legislation, including Articles 6 and 10, and to Article 76 of Law No. 03-10 on environmental protection and sustainable development. The exact investment-law citation is not supplied in the passage.

[15] -Article 2 of the decree governing the Higher Council for the Environment and Sustainable Development is cited in the source manuscript, but the decree's number and date are not supplied in that passage.

[16] - Article 21 of Algerian Law No. 01-20 on Land-Use Planning and Sustainable Development is cited in the source manuscript as the basis for the National Council for Land-Use Planning and Sustainable Development.

[17] - The source manuscript cites Articles 1–6 of the regulatory framework governing the National Observatory for the Environment and Sustainable Development, but does not give the full title and number in that passage.

[18] - The source manuscript refers to Article 17 of Executive Decree No. 02-115 as the basis for the National Observatory for the Promotion of Renewable Energies within the Framework of Sustainable Development.

[19] - The source manuscript refers to a bilateral agreement between Algeria and Tunisia delimiting maritime boundaries, dated 11 July 2011, and states that it was approved by Presidential Decree No. 13-316.

[20] - Algerian Presidential Decree No. 18-96, cited in the source manuscript in relation to Algeria's exclusive economic zone and the use of marine resources.